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Prague, Capital of Czechoslovakia and Imagination

By Gerald K. Geerlings

Abroad on the Woodman Travelling Scholarship, 1924–25

Sketches by the Author

THERE is no other city like it.

Perhaps no other city wants to be. There is good Gothic and bad Gothic, extravagant baroque and marvellous roofs, brilliant peasant costumes and a language which baffles pronunciation—a jumble of the admirable, the laughable, the un-understandable—a city without a duplicate. It is a place where any fairy-tale may well have happened. Such is ancient Prague, capital of the new republic of Czechoslovakia.

Probably Prague is customarily and vaguely thought of as being somewhere in Central Europe, inhabited by Czechs, who originated the "Bohemian life," producing at present queer dress-goods designs, and, in general, having the appearance of a series of "sets" for a Russian ballet. All of which is correct in a measure.

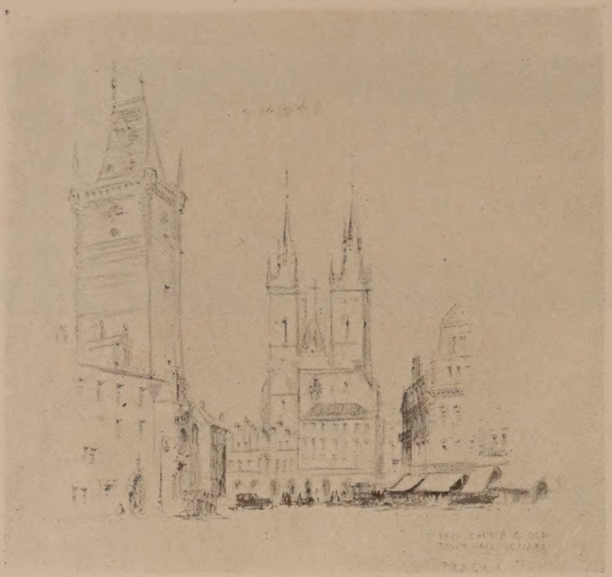
Being Bohemian by birth, the Czechs naturally lead a "Bohemian life" in all respects except as we know the term. From all appearances the cafés are not as wild as the tamest in Greenwich Village. Bobbed hair is a museum curiosity, and cigarettes are too expensive for women to smoke. The embroidery and textile designs are quaintly original and often smack of geometry propositions. The city itself offers a range of settings all ready for the curtain of a blood-curdling Marlowe or a frisking modern comedy.

Prague has led its varied existence on the Moldau River, an Elbe tributary, since the eighth century, through a checkered domination by Germans, Bohemians, and Austrians. A liberal share of the time it was racked by civil, political, and Hussite wars, assimilating the while a vast variety of contradictory influences. As a result the Prague of the moment presents a curious picture!

Some spots of the city elicit outbursts of unstinted approval as ranking among the most picturesque revels in Europe, while others look for all the world as though they were "only fooling" and don't mean to really be as they are. The Moravian costume is deservedly famed. Occasionally it comes to town on a farm lass, but, like as not, the background is an ultra-modern sport model of a roadster. The town of John Huss and King Wenceslaus IV, the gathering place of transplanted Italian and French artists, the city which under Charles IV (1346–78) was the seat of the German Empire, and which over-night has become the capital of a new republic, offers suggestions of what to do in some fields and in others, equally emphatically, what not to do.

The best show in Prague is the Charles Bridge.

It is not only the aristocratic old sixteen-arched Gothic structure with its towers at each end (see sketches), but the life that surges back and forth the livelong day. The bridge is the focus of what is most picturesque, what is best Gothic, and what is most representative of Prague up to the baroque scourge. It is the fashion review of costumes old and new. On its one side lies the old citadel and, on the other, the "Klein Seite" (small city), the latter surmounted by the Cathedral and the tremendous former royal residence and parliamentary buildings. It was from this bridge that the patron saint of Bohemia, John Nepomuc, is said to have been thrown into the river by order of King Wenceslaus IV, "for refusing to betray what the empress had told him in the



confessional." From here is best seen the "Františkovo Nábřeži," the ample and well-planted quay on one side, and the islands and Belvedere Park on the other.

The second-best show in Prague, historically, lies between cornices and the sky. In the Gothic work roofs are always very steeply pitched, with little turrets at corners, and on the Teyn Church (see sketch) several half-way up for good measure. Prague gets considerable snow in winter, so that no doubt the steep pitch is useful. In addition it gives the city sky-line a distinctive appearance from all points of view. Spires, towers, and roofs poke anxiously above each other, producing a silhouette like a graph fluctuation of a Wall Street "leader." The predominating color is gray with variations. However, one wishes the color variety were bolder, because with towers and spires looking like fairy-tale illustrations, they would seem to make better mezzotints than decorous dry-points.

But what the Gothic may lack in color is more than supplied by the baroque. Baedeker calls it "baroque after the Swedish manner." It seems rather unfair to the Swedes. A cubist in wildest delirium striving to depict the Einstein theory could scarcely arrive at more grotesque forms with more contrasting colors than the baroque creations which roof too many buildings. Usually covered by copper, the forms that are intended for spires, domes, and turrets twist themselves into fantastic shapes, such as no "Swedish manner" could be held accountable for. The color of the copper is a redeeming feature, but it requires more than that to reconcile the average taste to Prague's baroque contortions.

Perhaps the Bohemians had a strain of the rococo long before the baroque knew it was to come into being. In certain of the Gothic work, like the Powder Tower (see sketch), the tendency unfortunately seems to have asserted itself. No wall surface is let live peaceably. Every thinkable spot is fretted and carved and sculptured until all virtue is lost. However, the Powder Tower now seems happy and akin to its surroundings among modern neighbors as gay and frothy as competing wedding-cakes.

It is difficult to understand the Prague taste, for, while it has the myriad of queer creations all over the city, it has displayed surprisingly good taste in the Cathedral completion. It was begun in 1344 under Charles IV, by Mathias of Arras, who derived his inspiration from the Cathedral of Narbonne. The Hussite War caused its building to be discontinued, after choir and transepts were completed and nave begun. Not until 1871 was the building again started. With the exception of a queer after-thought excrescence of a spire over the south transept, it is a brilliant piece of Gothic. Perhaps if it had been blessed with a "live" press-agent, it might rank with the better-known and best-studied cathedrals of Europe. At all events, it is particularly fine on the south (minus the forementioned tower), and if documents only were available, they would be a happy addition to any Gothic library, with refreshing composition and detail.

The fact that the work of completing the nave since 1871 has maintained the high character of the choir, in spite of the blighting baroque which Prague infected itself with, is most curious and incredible. The interior is so pathetically cluttered with baroque atrocities that it is a marvel that divine service can be carried on. But it is Prague's usual self—continue the erection of a beautiful piece of Gothic on the exterior, yet forget about it so entirely on the interior that chapels look more like amusement-park grottoes than Christian shrines.

The Teyn church is now so hemmed in by houses that it must be entered through them. The ones in front of the church, facing the old Town Hall Square (see sketch), are particularly amusing, topped off by a series of arches of varying heights. If one or another part of the surrounding houses were not a part of the church, they might be cleared away. But they have been there for centuries, built when the citadel was too crowded to allow even the Cathedral façade freedom. It is like Prague to have the little parasite towers stuck on half-way up the spires. It is even more characteristic that on the front elevation one of the two flanking towers should be just sufficiently wider than the other to look like a mistake.

Facing the Teyn church, on the other side of the square, are the tower and chapel, which remain from 1474. The bottom of the tower, with the outdoor shrine, is a rich bit of stone color, amounting to almost an ashlar mosaic. Colors run from red-purple sandstone to light buff. The ornament on the shrine itself has all shades of reds and blues, offset by gilt.

In 1351 one Peter Parler erected the Karlov church, with a dome seventy-four and a half feet in diameter. It was one of the outstanding achievements of its kind in its age. The story goes that the day before the consecrative service,

VIEW DOWN "HUSOVA TŘIDA"

good Peter became crazed by the idea of the hugeness of the unprecedented mediæval dome he had built. He vainly implored the church authorities not to hold the service lest the dome fall in. Laughingly they refused, so Parler left them to commit suicide. The dome still stands. It is still perfectly good except for the frightful baroque additions some one has criminally added.

Old Prague was a citadel, cramped in a flat corner of the twisting Moldau, protected by healthy fortifications. In spite of the growth of the city, intermittent wars seem to have instilled a fear of expansion beyond its river and moat. The result in the old town, except where a few modern streets have been hewn, is a street tangle which is scarcely rivalled anywhere. Streets start in one direction, change their minds a moment later, side-step, start to return, and end confusedly in a court. From here there may lead a dark passage under a house or two to join some other alley gone astray. And, again, there may not.

The curious condition which brought about jamming houses against the erstwhile cathedral, the Teyn church, did even worse to the Jewish burial ground. Space was meagrely limited to about three acres, yet from 1439 to 1787 there were twelve thousand interments. In order to accomplish this, series of burials had to be made one above the other, so that at present the moss-grown tombstones are so tightly crammed one on the other, that inscriptions can be read only by the drooping tree-branches and plentiful ferns. The neighboring synagogue, the "Staronová Skola," is the oldest in the city, and jealously treasures a large flag presented to the Jews by Ferdinand III for bravery in the siege of 1338, when their quarter of the city was burned.

Modern Prague has built its most important street, the "Na Příkopě," on the old moat. It has expanded in all directions and on across the river. However, it has preserved a generous and well-planted quay along the Moldau, practically its entire length of flow through the city. It is most enjoyable near the Charles Bridge, where it is called the "Františkovo nábřeži." The buildings fronting on it have allowed space for planting before the pedestrians and traffic begin. The walk along the river wall is pleasantly provided with shade, benches, and views. The group on the hill opposite, consisting of Cathedral and old palace buildings (see sketch), with the Charles Bridge and series of old mills in the foreground, framed by sycamore trees, makes as fine a composition in mass and color as any studied canvas. There are boathouses and swimming sheds a short way down-stream, along the Belvedere Park. There are young forests of trees on both banks and covering the islands as the Moldau wanders through the suburbs. It is an everlasting monument to Prague that, after weathering centuries of congestion, now, in expanding, she has allowed herself to enjoy life along the river. And so there are children and flowers, costumes and groups of gay people, a promenade which is a joyous living asset, when so easily it might have been the filthy, smelly liability into which our American cities degrade their rivers as they grow.

Prague has a populace and type of its own. En route one may have come to know the Italians, Austrians, French, Swiss, or Germans by the so-called "type." That is always an indefinite term at best, but if there be "types" in other countries, so also are there in Bohemia's capital. In stature and complexion the people seem Nordic: large and fair, bright eyes, very often blue. The carriage of both men and women is very good, rather above their neighboring peoples'. There

"PRAŠNÁ BRÁNA"
(POWDER TOWER)
PRAGUE.

are apt to be a delicacy and fineness of feature which distinguish them from the Austrians and Germans, although, like the latter, they are inclined toward fair complexions and blond hair. In manner they are kindly disposed, being anxious to be of service to strangers—an asset of which perhaps they do not realize the magnitude. It is one of those rare places where one may wander about at will, stopping to investigate what is of interest, making sketches, taking notes, photographing, and what not, without being pursued by an irritating horde of the curious.

Perhaps it is because the city is queer that even an American's action causes no stir!

The worst thing about Prague is the language. No double-solution crossword puzzle or problem in calculus was ever one-tenth as impossible as any Czecho sign. Nothing one ever learned before, in school or out, is of any use to make any sense or sound out of the simplest word. Greek and Chinese are easier because they do not stir the conscience into feeling that one should be able to pronounce at least a single word. Czecho uses our alphabet, but in what a gymnastic manner! Consonants follow each other with utmost glee and never a vowel to break up their parade. When there is a reasonable sprinkling of vowels, then the consonants wear halos, arrows, accents, crosses—and who would dare commit sacrilege by plunging in to pronounce them? But the people are kindly and glad to help, even though it be by means of a ludicrous combination of words from several tongues and gestures in accordance.

Prague seems to have survived the war better in one respect than any other place in Europe. It has as handsome and gay peasant costumes basking on the streets as the rest of Europe treasures in its museums. Country folk come to town resplendent as mediæval aristocrats. The war introduced modern dress with a vengeance, of course, and so occasionally, besides the full costume, there is a museum-piece of embroidery being sported as a shirt or scarf.

The peasant costume is a gorgeous riot of color and embroidery on both men and women. What the latter wear might well be a brilliant ball costume, except from the waist down, for no modern woman would consider donning the miles upon miles of petticoats, stiff with starch and embroidered flounces, and, more extraordinary still, black boots half-way up to the knee. The petticoats, always of white, are of varying lengths, the innermost the longest, of course, so as to display the wealth of needlework. The top skirt is apt to be of so brilliant a red that even a bronze bull would foam with rage. There might be a gaily embroidered apron, too. Above the waist there is likely to be a white blouse with very full sleeves, decorated on the lower part, and tight cuffs. A richly decorated bodice, often of color to match the skirt, would be worn over the blouse. The head-dress may be most magnificent. Even in its simplest stage there is a tight bonnet with a large, stiff, embroidered butterfly bow in the back, tied on by bright ribbons. From underneath this sometimes peers a rich head-band, but whether or not it is present, large earrings outdazzle all else, anyway.

The men come in for a good inning, too. They start off their costume by some cocky shaped little hat, with a bunch of gay little feathers or a single swooping big one. Their shirts are a marvel of color design on bosom and sleeves, over which goes a vest. This may be of deep-colored velvet or, better, of soft leather, decorated like a French ballroom, front and back, and loosely tied in front by gold chains, lockets, medals, or what not from the family treasure-chest. But the festivity does not end there. Breeches add their share by being of a dark color embroidered in contrasting colors on the front of the thigh. Big boots of shining black reach up to the knee and clanking spurs end the melody.

If you would see Prague on parade, the day in all the year is May 16. All of Bohemia comes to form a monstrous parade, which visits the shrine of the patron saint, John Nepomuc, where he was thrown from Charles Bridge. In stately procession there are contingents of girls from the Moravian villages and brass bands from Bohemian towns, a gay swirl of color and dress, in spite of the solemnity. There are bands of civil and military organizations dressed in gray uniforms and cerulean-blue shirts, boy scouts and girl scouts, mourners and business men, and, lastly, the Prince Bishop and his retinue. The procession moves slowly across Charles Bridge, does obeisance before the shrine, and then toils across and up the Schody Zámeché with its two hundred and five steps, leading to the cathedral.

During the week of the May 16 festival is also the National Agricultural Fair. In itself it is a bit messy and uninspired, as farming-implement fairs go, unless one is an interested professional. But there are the people from the country, who little realize that the real show is not the improved tractors and reapers and separators, but their match-

less clothes of regal embroidery in every shade and pattern, on full, rich backgrounds of reds and purple and white.

In a sense, Prague has an exposition look all of the time. Candy and fruit stalls of every color enliven the squares, bridge-heads, and wide streets. In the Malostranske Náměsti (square) at the foot of the Cathedral hill, a flock of amusement sheds, merry-go-rounds, and fakir shows looks as though a small American circus had sailed into town. It is a good-natured, jovial atmosphere there, but hardly less so than any average street-car, park walk, or business street. The city has a happy-go-lucky air. It is festive from the inside out. The people are kindly as colorful, and look as though life were not too serious a matter to enjoy color and sparkle, and business not too important to eliminate pure fun in living.

It is a good place for a mental vacation, Prague. With a jovial air it exhibits what it has done which is pleasing and commendable, as well as what is restless and bad taste. Tortured Gothic and gouty baroque serve to set off to better advantage the restful and the simple. A galaxy of brilliant costumes displays all too emphatically what loss of imagination modern dress has brought in. Fairy-tale towers and elf eeries release the eye from our habitual vertical and horizontal, and give it a chance to rove about, populating the surroundings with the favorite tales of forgotten childhood.

Architecturally it is a worth-while vacation. It imbues one with a desire to leave off designing with a 7-H pencil in a stiff frame of mind to correspond, and instead to express a contagious buoyancy of unfettered imagination with charcoal and pastel.

Book Reviews

ARCHITECTURAL IRON DESIGN AND DETAILING (As Required by the Laws of New York). By Daniel M. Driscoll, Instructor in Ornamental Iron Detailing, Mechanics Institute, New York City. With an Introduction by Louis Rouillcon, B.S.M.A., Director Mechanics Institute, New York City. Illustrated. D. Van Nostrand Co., 8 Warren Street, New York.

The extensive industry of ornamental ironwork has been, until recently, without school presentation, and, until now, without a literature. It is an important branch of the building trades, in which large sums of money are invested, and which employs thousands of men. There has been felt the need of formal instruction in the technic of the trade, on the designing, detailing, manufacturing, and erecting sides, and the even greater need of books of instruction and reference. A three-year course of instruction in ornamental ironwork is now a part of the curriculum of the Mechanics Institute, and this book is the text of that instruction. It is largely an interpretation of the three legal codes to which all such fabricated and erected ironwork must conform.

But the book is planned to be more than a mere text-book for classroom use. It has been expanded to serve as a book of reference for this particular trade, and as the pioneer book in its field it is hoped that it may meet the needs of those in whose interests it is written.

THE ART OF WATER-COLOR PAINTING. By E. Barnard Lintott. Universal Art Series. Illustrated. Charles Scribner's Sons, New York.

This is an English book by an English water-colorist, and that is to say that it has authority and the traditions of many years of water-color painting of a high order.

The author says in his preface that while primarily written for the student, he has in mind "the establishment of a National Gallery of British Water-Color Arts."

He writes of The Primary Needs of the Water-Color Painter; tells about Methods; The Divisions of Transparent Water-Color; Opaque Water-Color; Drawing; Composition; Technic.

The sketches of famous names in the story of English water-color painting are instructive, and the examples of their work shown in the illustrations are valuable exhibits.

The work of some moderns is shown, including the author.

THE ROMAN ALPHABET AND ITS DERIVATIVES. By Allen W. Seaby. Charles Scribner's Sons, New York.

A useful book for the draftsman, the student, and teacher. The art of fine lettering is something that appeals to all interested in the decorative and memorial arts. The numerous plates here shown make a useful and suggestive reference.

SKETCHES OF NORTHERN SPANISH ARCHITECTURE IN PEN, PENCIL, AND WASH. By Samuel Chamberlain. The Architectural Book Pub. Co., 31 East 12th St., New York.

These drawings by Mr. Chamberlain, printed from gelatin plates, admirably reproduce the quality and charm of the originals. There is a brief Foreword that is well worth reading, for the personal note it conveys and for the fine enthusiasm that is revealed in all that Mr. Chamberlain does. He loves his work and his sense of the picturesque is combined with the draftsman's appreciation of the need of definiteness in certain subjects.

The drawings are printed on loose sheets inclosed in an attractive portfolio. They are things to cherish and admire.

ARCHITECTURE. By Sir Thomas Graham Jackson, Bart., R. A. Macmillan and Co., Limited, New York and London.

The manuscript of this interesting and scholarly book was completed only a month before the author's death. It was seen through the press by his son assisted by Mr. George Horner, a friend of the author.

It is a very readable general history of architecture addressed to both the professional and lay reader.

The latter will find it especially informing, and will rejoice to find that the subject can be handled with vitality and avoidance of the many technicalities that are so often confusing and lacking in any real value. It gives a survey of the great buildings of the world and tells about the men who have made architectural history.

We found the chapters on French and English Gothic particularly interesting, and the explanation of the principles of Gothic construction and the differences between French and English church building made clear. So many of our architectural histories are cluttered up with needless speculations and theories.

The many illustrations are well printed and selected with good judgment.

That there is nothing about American architecture is perhaps a little surprising, but we do not remember any book by an Englishman that has adequately taken up the achievements of the New World.

OLD FRENCH FURNITURE AND ITS SURROUNDINGS. By Élisa Maillard, Attachée au Musée National de Cluny. Translated by MacIver Percival. One hundred and fifty-two illustrations. 4to. Charles Scribner's Sons, Publishers, New York.

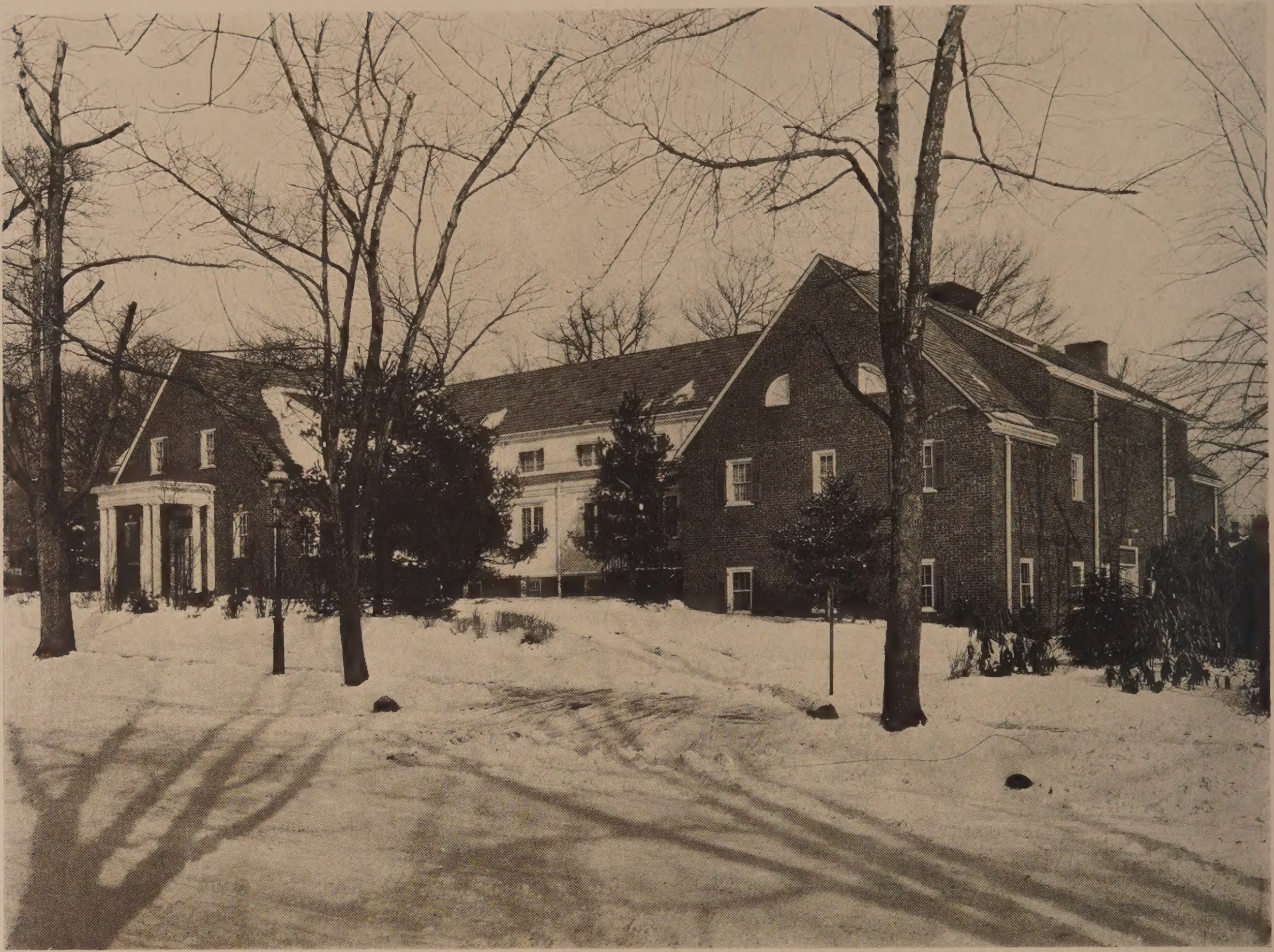
This book deals with the interior decoration and the furniture of French houses of bygone days in much the same way as its companion volume "Old English Furniture and its Surroundings" did with those of England.

It is not a book on furniture and woodwork alone, but includes, in addition to an account of the great cabinetmakers and their work, descriptions of those other arts which have so large a share in bringing about the harmonious effects which characterize the best French interiors. All the different crafts in the golden days of French decoration worked in the closest collaboration. Their artistic inspiration was drawn from the same sources, and in many cases all worked under a single director or the architect who had planned the decorative scheme in its entirety, the result being a unity of effect and perfection of craftsmanship attainable by no other means.

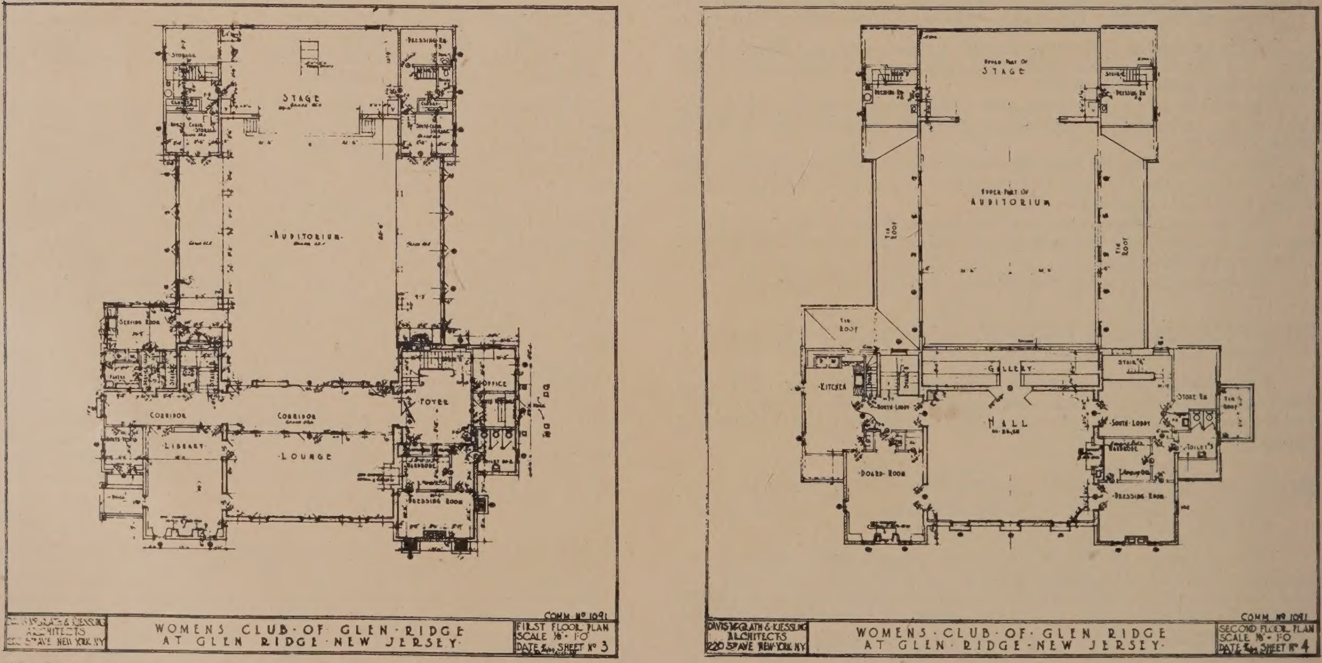
The period covered is from 1610 to 1815. The accession of Louis XIII has been chosen for the starting point as it may be taken as the date whence we may trace the beginnings of the definitely French style which developed during the latter half of the seventeenth century and continued in vigorous growth for upwards of a hundred years. At the beginning of the nineteenth century, however, its vitality, which for nearly two hundred years had been displayed in so many directions, appears to have exhausted itself, so that with the Restoration its history comes to an end.

AN ARCHITECT'S SIMPLE ENGINEERING PROBLEMS. By DeWitt C. Pond. Charles Scribner's Sons, New York.

Mr. Pond's little book will be welcomed in many offices, and what he has to say about Floor Loads; Design of Floor Slabs; Steel Beams; Safe-Load Tables; Various Loading Conditions of Beams; Wood and Concrete Beams; Floor Construction; Walls as Supports; Steel Columns; Concrete Columns, will help to save time and worry. It is a handy little book to have around.



GENERAL VIEW AND MAIN ENTRANCE.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COMM No 1091
FIRST FLOOR PLAN SCALE 1/8" = 1'0" DATE SHEET No 3
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WARDROBE
BOARD ROOM
DRESSING ROOM
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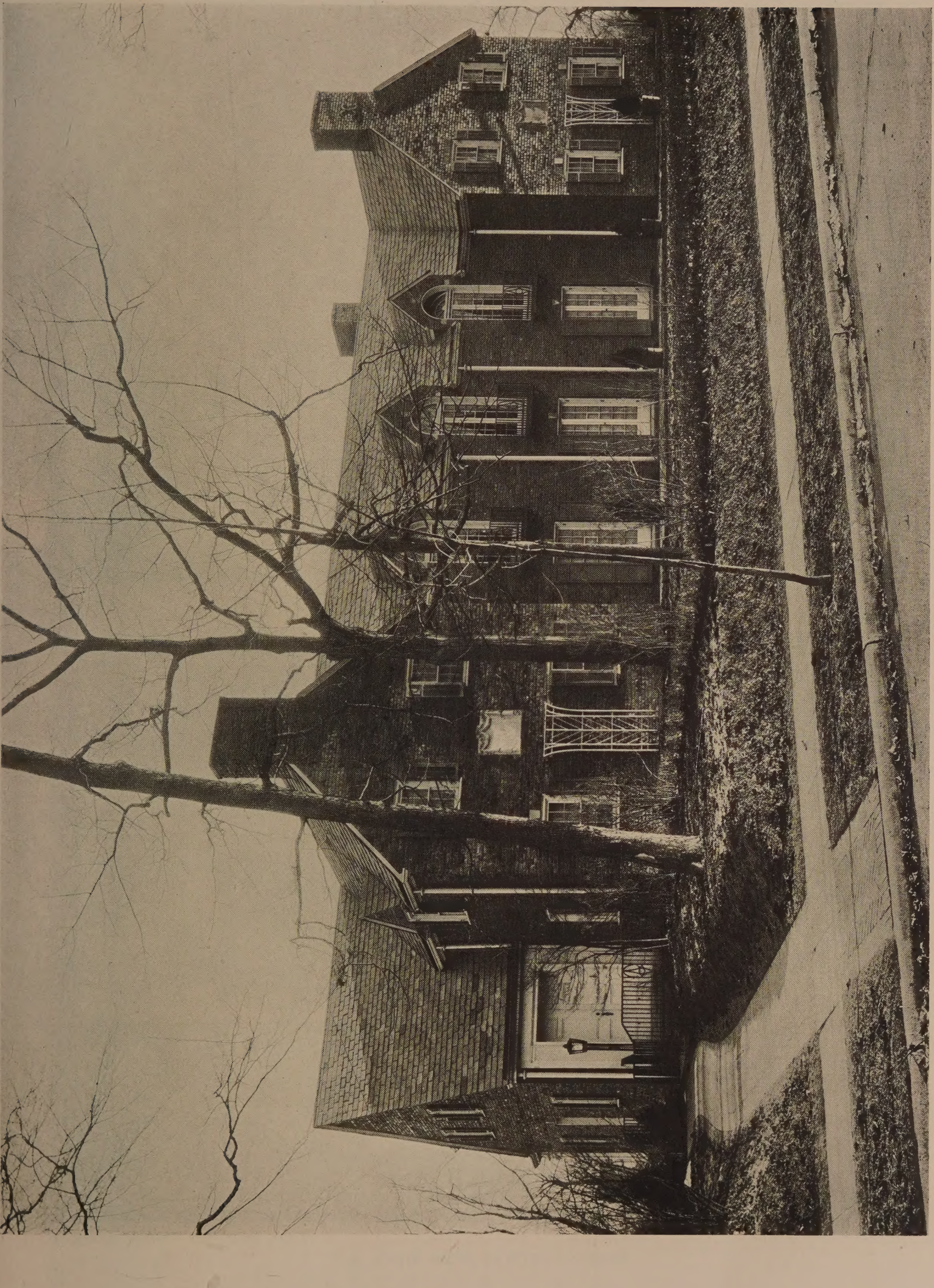
SECOND FLOOR PLAN SCALE 1/8" = 1'0" DATE SHEET No 4

PLANS.

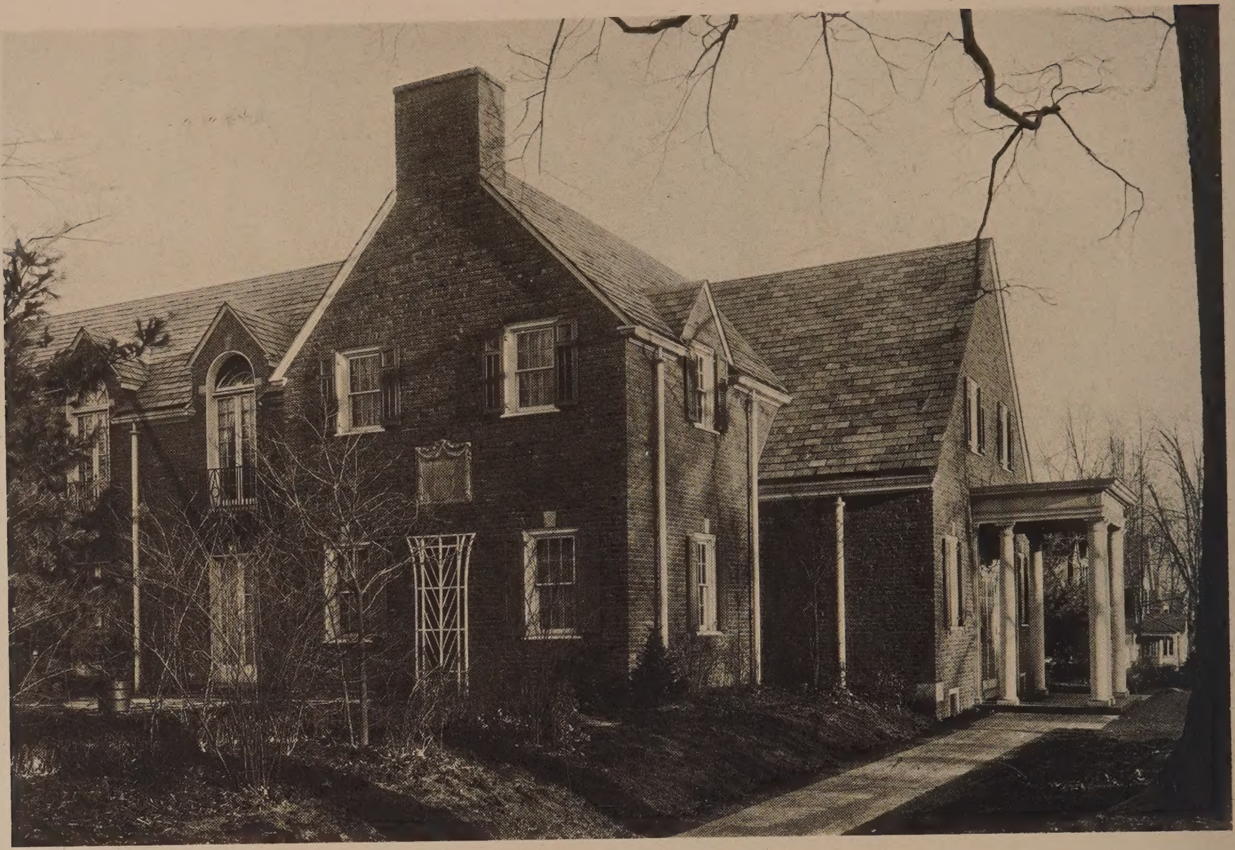
Davis, McGrath & Kiessling, Architects.

WOMEN'S CLUB OF GLEN RIDGE, N. J.



WOMEN'S CLUB OF GLEN RIDGE, N. J.

Davis, McGrath & Kiessling, Architects.



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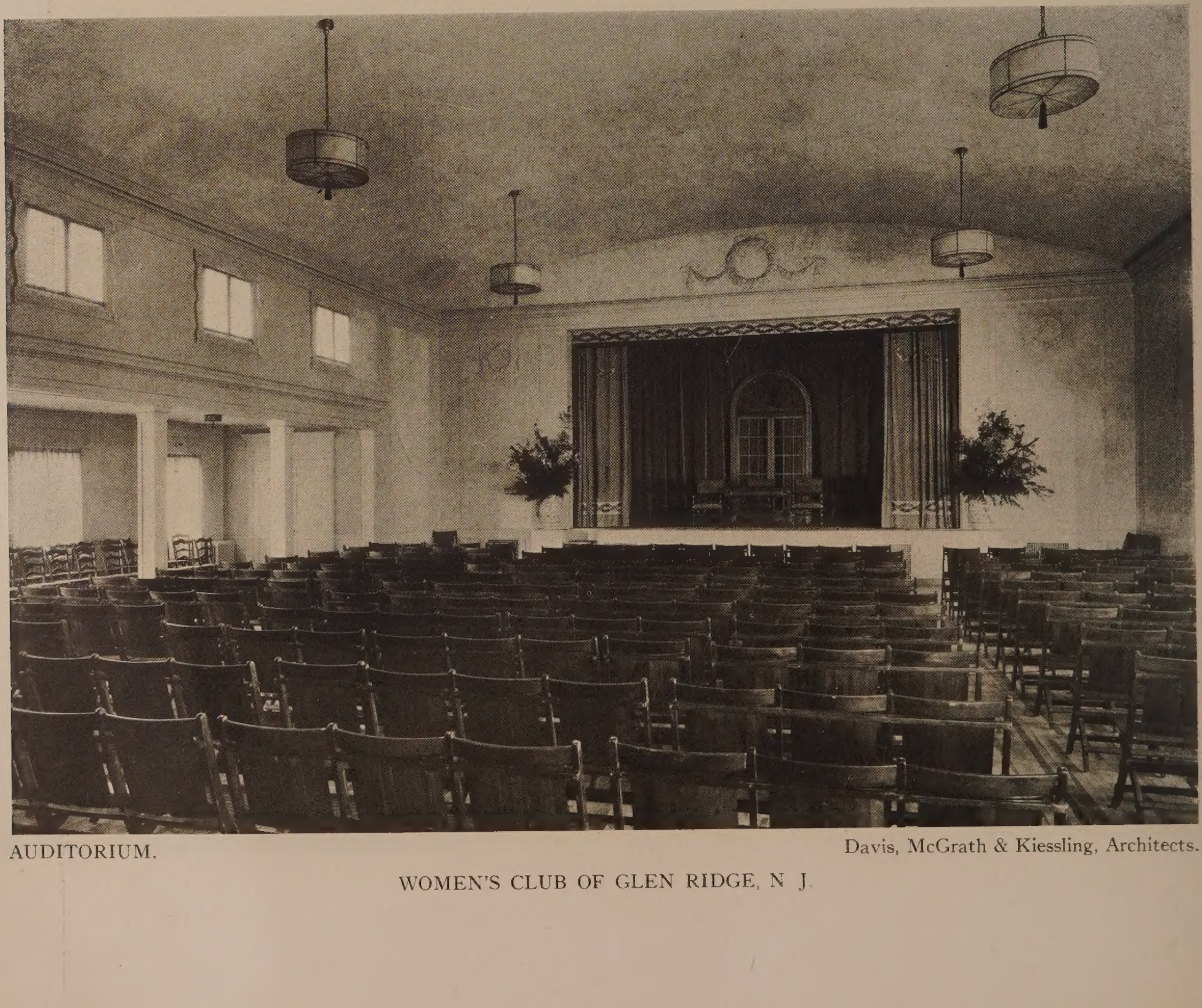
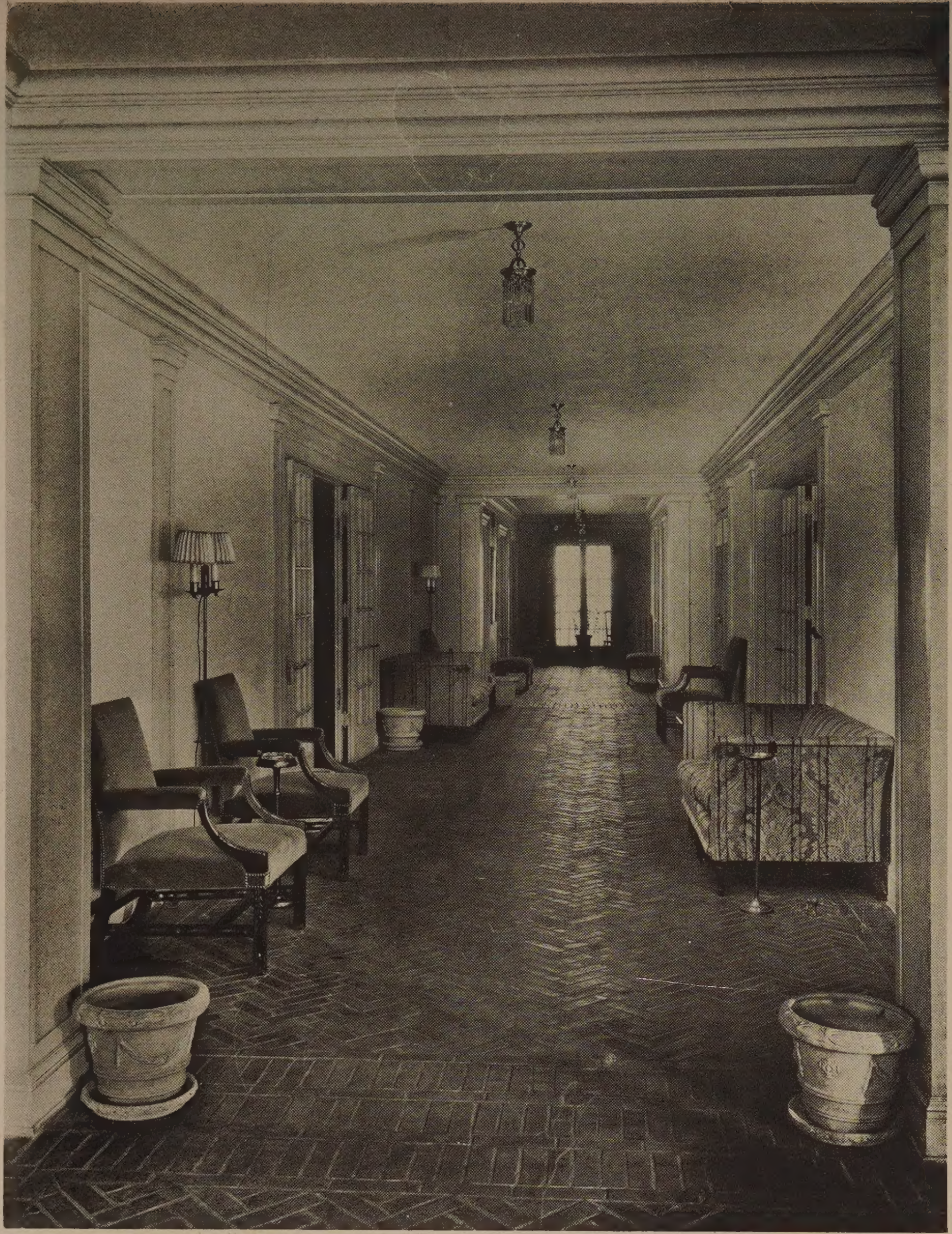


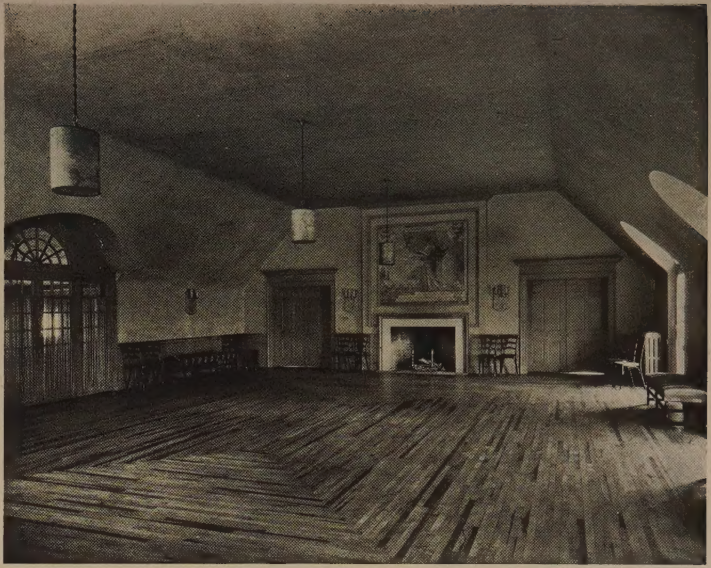
AUDITORIUM.

Davis, McGrath & Kiessling, Architects.

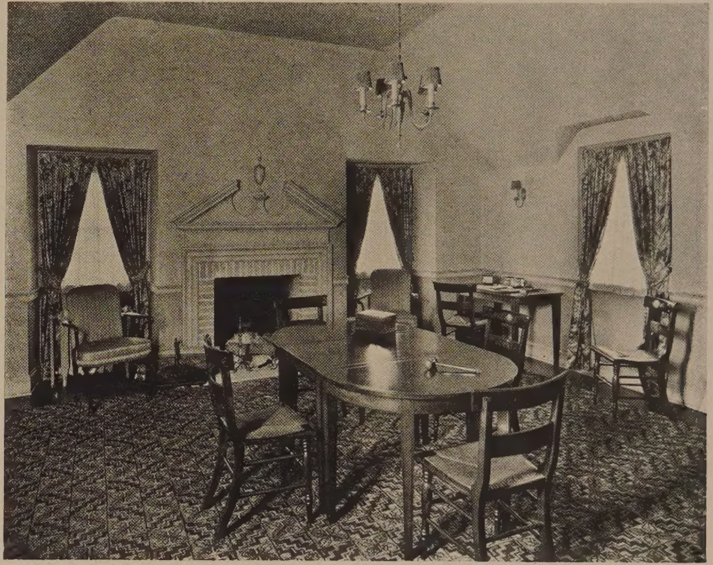
WOMEN'S CLUB OF GLEN RIDGE, N J.



CORRIDOR, FIRST FLOOR.

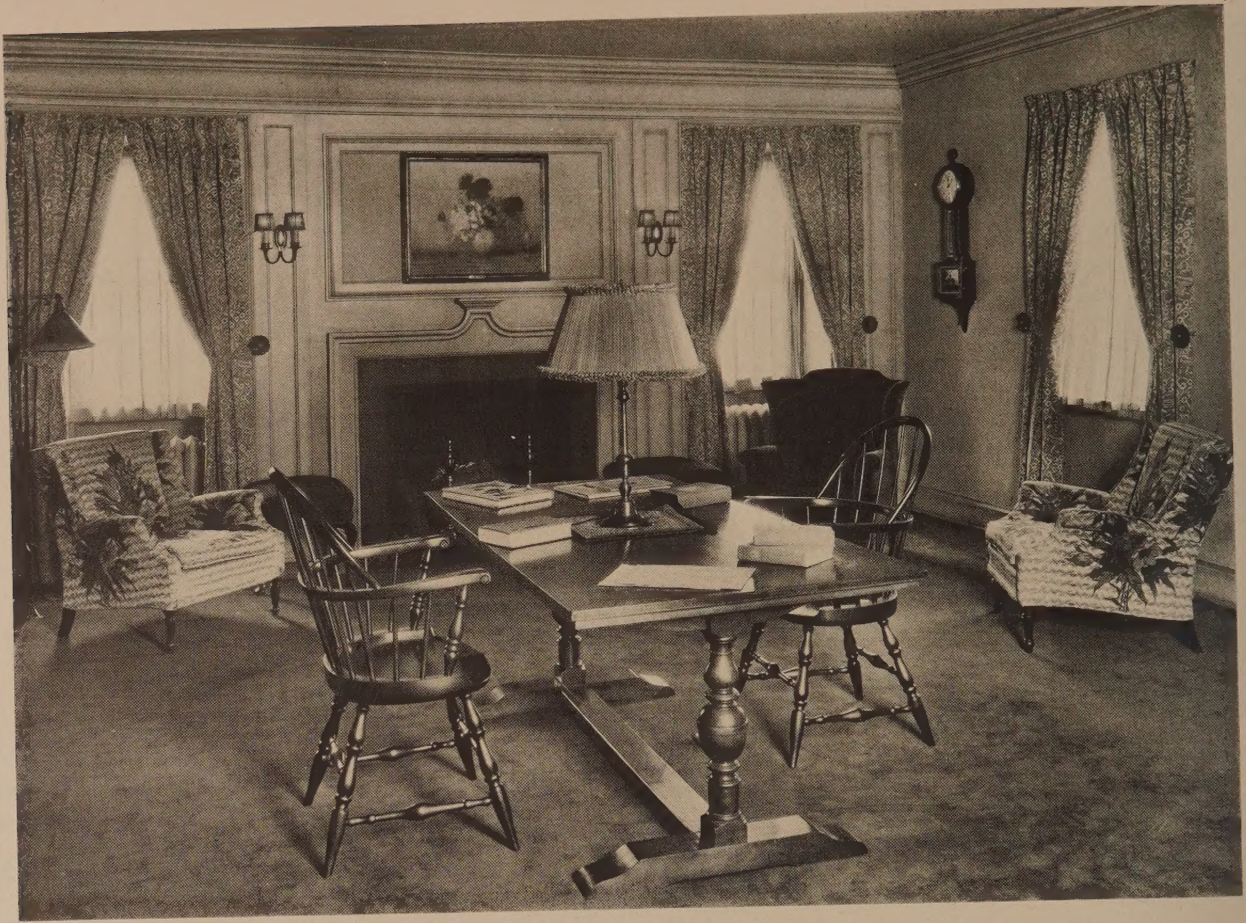


HALL, SECOND FLOOR.

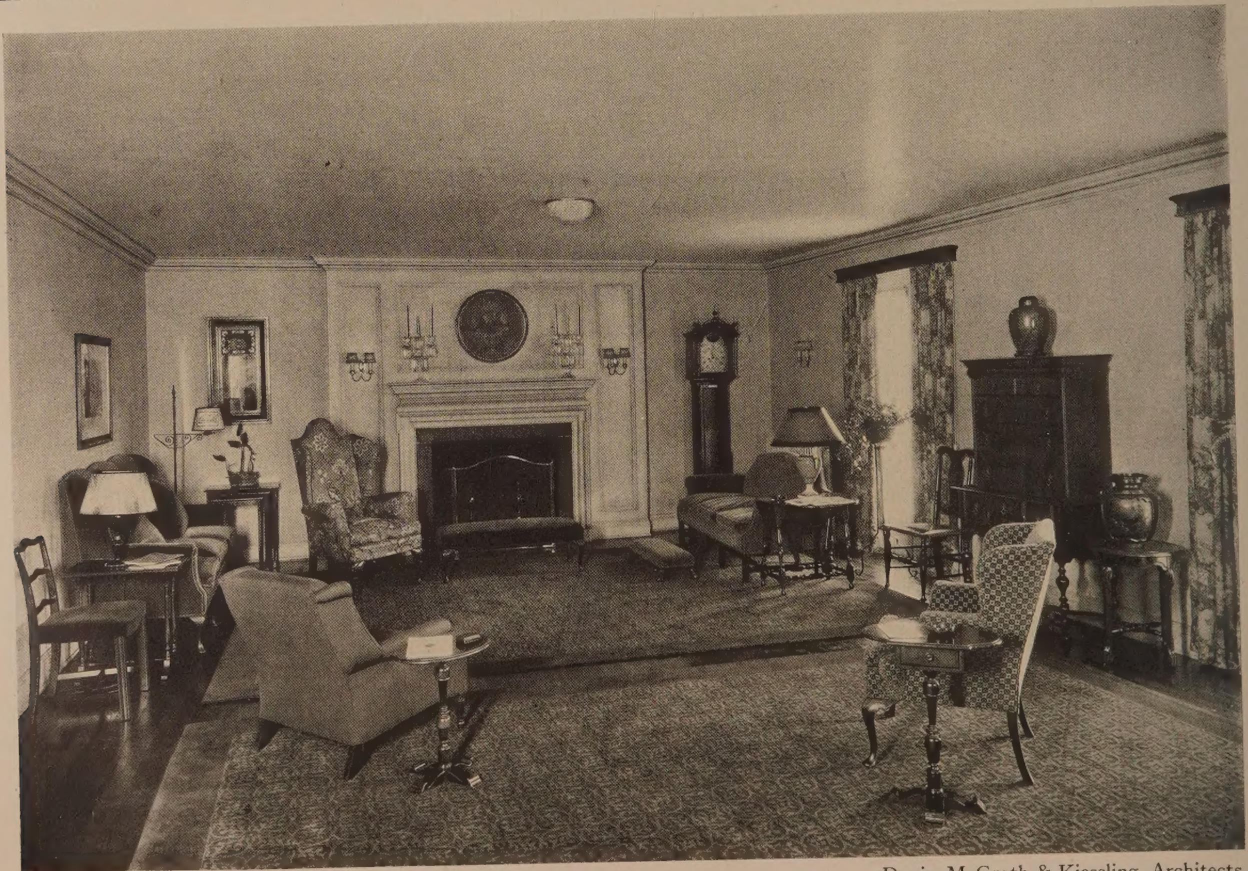


BOARD ROOM.

WOMEN'S CLUB OF GLEN RIDGE, N. J.
Davis, McGrath & Kiessling, Architects.



LIBRARY.



LOUNGE.

Davis, McGrath & Kiessling, Architects.

WOMEN'S CLUB OF GLEN RIDGE, N. J.

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THE PROFESSIONAL ARCHITECTVRAL MONTHLY
*Reg. U. S. Pat. Office Editorial and Other Comment

Industrial Housing

WE have received from the Bayonne Housing Corporation, of Bayonne, N. J., a pamphlet with the above title written by Andrew J. Thomas, one of the most enlightened and progressive of our architects, and one who has done the public a great service in his efforts at solving an acute and difficult problem.

Bayonne, suddenly transformed from a sleepy little suburb into a great industrial centre by the coming of the Standard Oil Co. of New Jersey and other large industries, was utterly unprepared to house the army of workers that followed the new developments.

The old way of trusting to the natural growth of building to take care of the situation proved the utter inadequacy of local conditions to meet the new problems. There was a housing breakdown that menaced both the social and economic welfare of the town.

A group of men, acting at the suggestion of the Bayonne Chamber of Commerce, undertook to deal with the situation in a thoroughly businesslike manner.

The Bayonne Housing Corporation was organized for the purpose of building houses, and the first garden apartments were built as a demonstration of an ideal method of producing wage-earners' housing.

The essential idea was a home of five or six rooms and bath with "modern conveniences," set in an environment of good architecture and gardens.

They were built to be operated on sound business principles and made to yield a moderate return on the capital invested.

There was no philanthropy in the plan, but it was based on sane principles of both social and economic need.

In the first of these homes, designed by Andrew J. Thomas, garden apartments, the wage-earner enjoys a home of a much higher standard than the local real-estate market offers, and he pays a rental of from two to four dollars a month less a room.

This means the standard home, including a bathroom and other modern conveniences, steam heat and hot-water supplied by the landlord.

From a purely idealistic point of view, perhaps the best value the tenants receive are soundly constructed buildings, attractive architecture, plenty of light and air.

Mr. Thomas says that the "economic factor is the main obstacle in industrial housing. The heart of the problem lies in the disproportionate increase in the cost of housing compared with the general level of commodity prices and wages. As a result of this maladjustment, the average thrifty wage-earner can scarcely afford a suitable home. What has caused housing to soar? The cause will be found not in circumstances which are beyond control, but rather in the inefficiency and disorganization of the housing industry itself.

"The removal of this inefficiency is the immediate purpose of contemporary housing technic, which has for its ultimate goal architectural and social progress.

"Economics, therefore, is fundamental in industrial housing, but housing economics is an extremely complex subject, and is involved deeply in the technic of housing architecture.

"Happily there has been in spite of many hindrances and incompetence a gradual improvement in the housing situation.

"One of the most unfortunate features in the whole situation in housing is the insidious undermining of human judgment which has taken place in the process.

"Housing is so complicated a subject, and so new is the technic which has been developed to deal with it, that responsible people do not understand what has happened. Few have visualized the slow change in economic conditions, and still fewer have pictured its effects.

"They do not perceive the economic and human waste in housing. As a result some people have come to regard as luxuries the necessities of daylight, garden, and recreation space, sanitation and sound architecture. They preach, in one way or another, a reconcilement to slum conditions. But this is the gospel of despair."

The rentals in the Bayonne Housing Corporation's apartments are: $10.25 a room a month on the first, second, and third floors; $9.75 a room for the fourth floor; and $9 a room on the fifth floor.

Mr. Thomas has had an exceptional experience in developing the garden-apartment idea, and other work of his that has met with much approval is at Jackson Heights, over on Long Island. There, of course, the problem was simplified by the wider latitude in expenditure and higher rentals obtainable. The idea, however, is essentially the same. We can imagine the consternation that would follow the statement to an old-time investor in New York tenements that only 36 per cent of an available lot was to be used for the building, as was the case in the Bayonne development!

That the problem of housing for the man with a moderate income is becoming increasingly difficult needs no accenting to any one living in our cities. In New York it has been recently asserted that the conditions will ultimately make it impossible for any but the rich to live on the island.

Block after block of old brown-stone houses in undesirable neighborhoods are being altered in New York and rented for many times their old returns, and the tendency to continue this sort of development on an even larger scale is evident. The people who have lived in these houses have been forced to move, and their places have been taken by others able to pay the increased rent.

Rentals are not going to be less; on the contrary, the tendency is constantly to go higher.

Youth Springs Eternal

IN reading the account of the recent gorgeous ball and pageant of the Beaux Arts Architects in New York, we were impressed above all with the spirit of eternal youth that makes such things possible in these modern days of too much actuality and materialism.

It takes a group of men such as compose the Beaux Arts crowd, men devoted to the arts, to carry on the traditions of make-believe and fairy-tales. The artistic temperament it is called. And what is that? Who can define it to the satisfaction of the world at large? It is as indefinable as the oversoul that Emerson wrote about, as evanescent as the colors in a soap-bubble, and as buoyant as thistledown.

Think of the mere physical labor and time involved in preparing for such a performance. The hours of deep cogitating over what it shall be, the time spent in boning up on the historic backgrounds, the creating of a proper and fitting atmosphere.

Think of getting yourself up in the flumadoodle toggery, of living for the brief period of the occasion, as near as you possibly can, in the state of mind that the historians tell us was expressive of the time of Le Roi Soleil.

Only youth may dream of these things and act the part of the playboy. Pride, vanity, imagination, above all a sheer love of the idea of beautiful things, permit mature men to forget the ever-present insistence of the now, and lead them back to days when the game of life was as near as possible one long joyful pleasure hunt.

The men who made such a beautiful spectacle of this occasion are among the leaders of the architectural profession, and in giving their time and energies to this one-night performance, they gave of their knowledge and professional training, not alone to have some fun themselves, but to further the cause of the young men, students of the Beaux Arts School of Design, a most worthy and commendable cause.

As long as this spirit of youth lives, and it will live as long as there is any vitality left in our art, let the band go on playing and the past be made to live again in these make-believe spectacles of the days when art was more than trade and ideals beyond the selling.

We salute you, minions of Le Grand Monarque, playboys of our modern and wonderful world; may the inspiring example of your pageantry and the spirit that made it possible live in the land, and may your successors keep up the good work.

We shall have better architecture for these little diversions and closer comradeship among the men to whose genius and aspirations we already owe so much.

Shoddy and Dangerous

IF we can find much cause for pride in the general improvement of design in the better class of domestic architecture, we may also find occasion for exasperation and condemnation in the multitude of cheap and shoddy small houses that are going up by the thousand in the suburbs of every large city.

The jerry builder and contractor are very much abroad in the land, and the things they are doing are enough to make us despair of the future in more ways than one.

In the first place, the cheaply constructed house without proper fire-resisting precautions is a constant threat of disaster on a large scale.

Whole districts are covered with these dwellings, tinder for sparks from the initial fire, so close together that they would burn as one, once they got a good start.

But apart from the fire menace is the subversion and lowering of the public taste.

Be it said for the good of the profession that not one in a hundred of these eyesores is to be attributed to any one worthy of the name of architect. They come from all sorts of pattern-books put out by the thousand to help sell some particular product, and bear on their pictured faces the fact that they are made to appeal to tastes that we associate with the dark ages in our domestic architecture.

"There has been too much carelessness, too much of a desire for clearing big profits in constructions. Sooner or later we must face the time when we will be getting less profit and think more of permanency in our work."

We are all too much in a hurry to get rich to care a hang about good, old-fashioned construction, or to be willing to pay the small fee that a competent architect demands to take a house out of the stereotyped pattern.

There are parts of Long Island that are covered with these mushroom atrocities, row after row of things that can only be called houses.

Our attention has been attracted by some of the small houses that we pass on our journeys to and from the city along the New Haven road.

Pelham is a notably interesting suburb and there are a number of very small houses seen from the train that show good taste and a desire for simplicity and substantial construction.

But the tremendous demand for almost any kind of a place that may be bought ready-built out of the city has produced an era in building that happily passing time will make obsolete.

These hurry-up houses are in for a short life, and we feel sorry for the victims who buy them with the hope of living in them as permanent homes.

Awards at the Architectural League Exhibition, New York

MEDALS were distributed by Alexander B. Trowbridge, president of the league, as follows:

John Mead Howells and Raymond M. Hood, associated in the designing of the Chicago Tribune Building, received the medal of honor in architecture. George Davidson received the medal of honor in painting for his decorative panel, "Commerce."

The medal for sculpture was awarded Charles Keck for his statue of "Victory" crowning the Montclair, N. J., War Memorial, of which Mr. Hood was the architect.

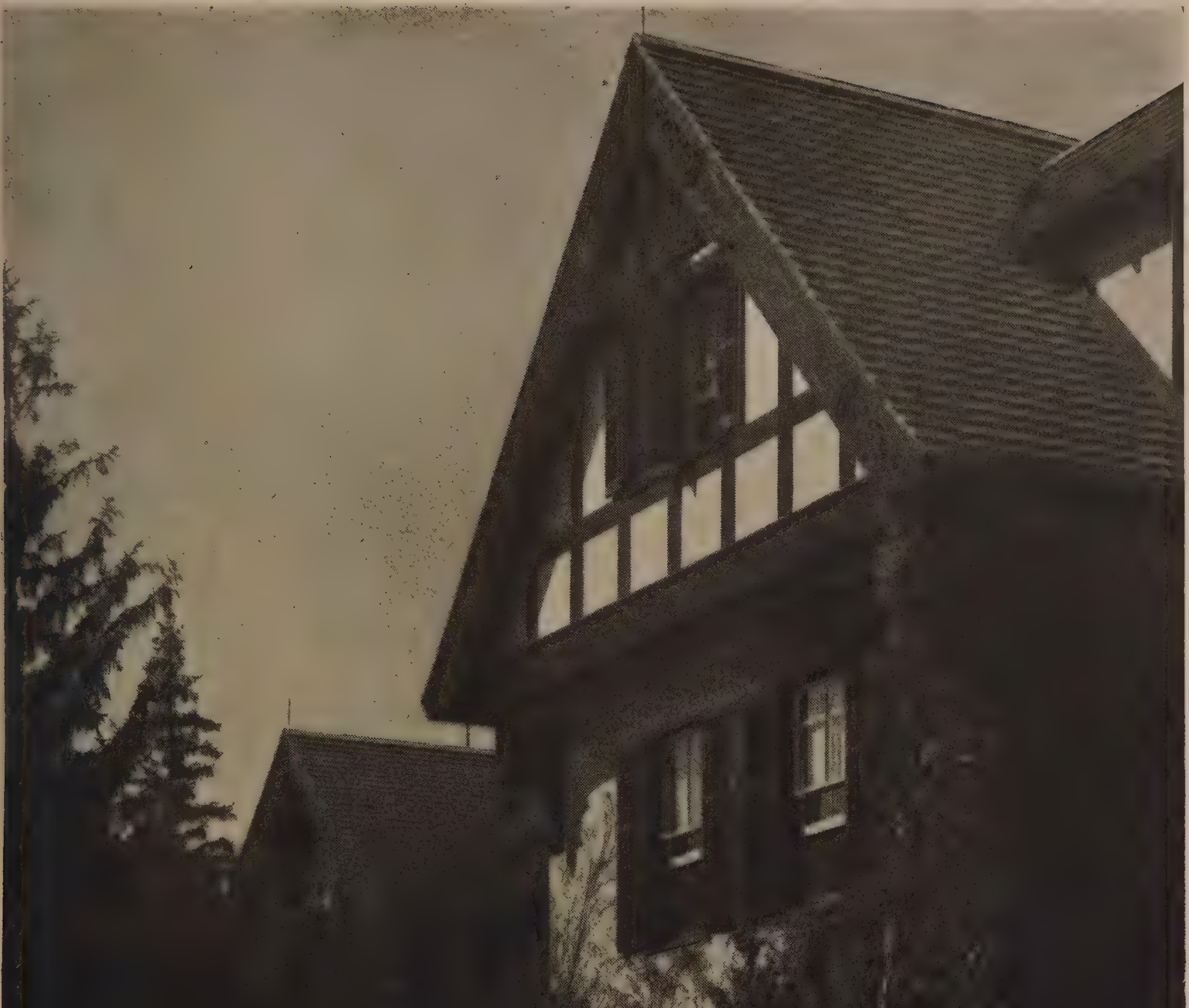
Oscar Bach won the medal for design and craftsmanship in native industrial art. His work in wrought-iron was especially notable. The Avery prize for sculpture was given to Benjamin T. Kurtz, of Baltimore, for his "Duck," a small piece of sculpture in bronze.

Harry Wearne, president of the Art in Trades Club, was given the Michael Friedsam medal, bestowed for conspicuous achievement in encouraging art in industry.

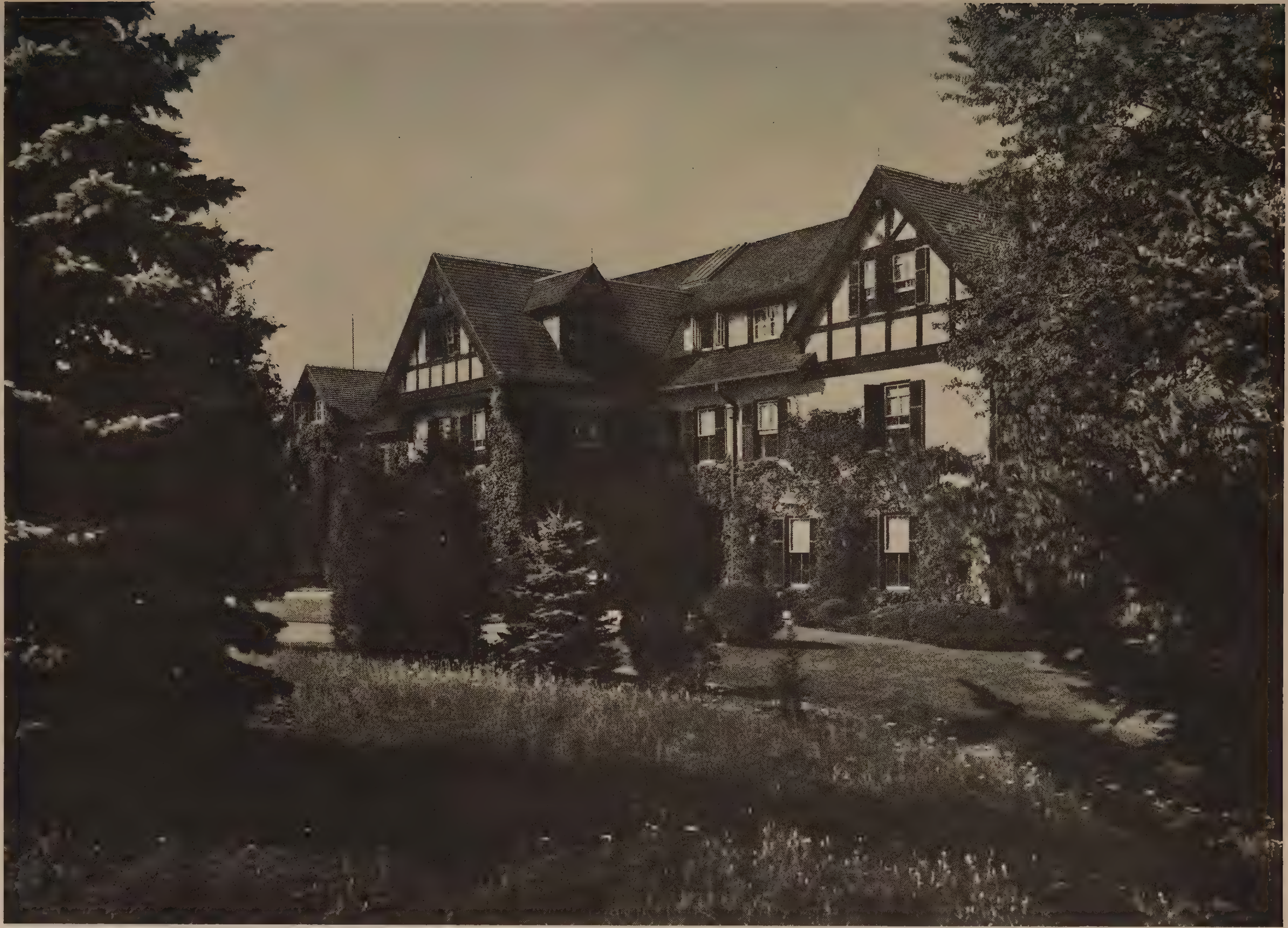
The president's medal, designed by Daniel C. French, was awarded to Sarah Cooper Hewitt and her sister, the late Eleanor Gurnee Hewitt, for their distinguished service to the allied arts. This award was in recognition of their services in upbuilding the Cooper Institute and the museum for which the sisters were responsible.

The work of the French architects and decorators made possible through the efforts of Mr. Bossom added much interest.

The most discussed exhibit was the competitive drawings for the Roosevelt Memorial, won by Mr. John Russell Pope.

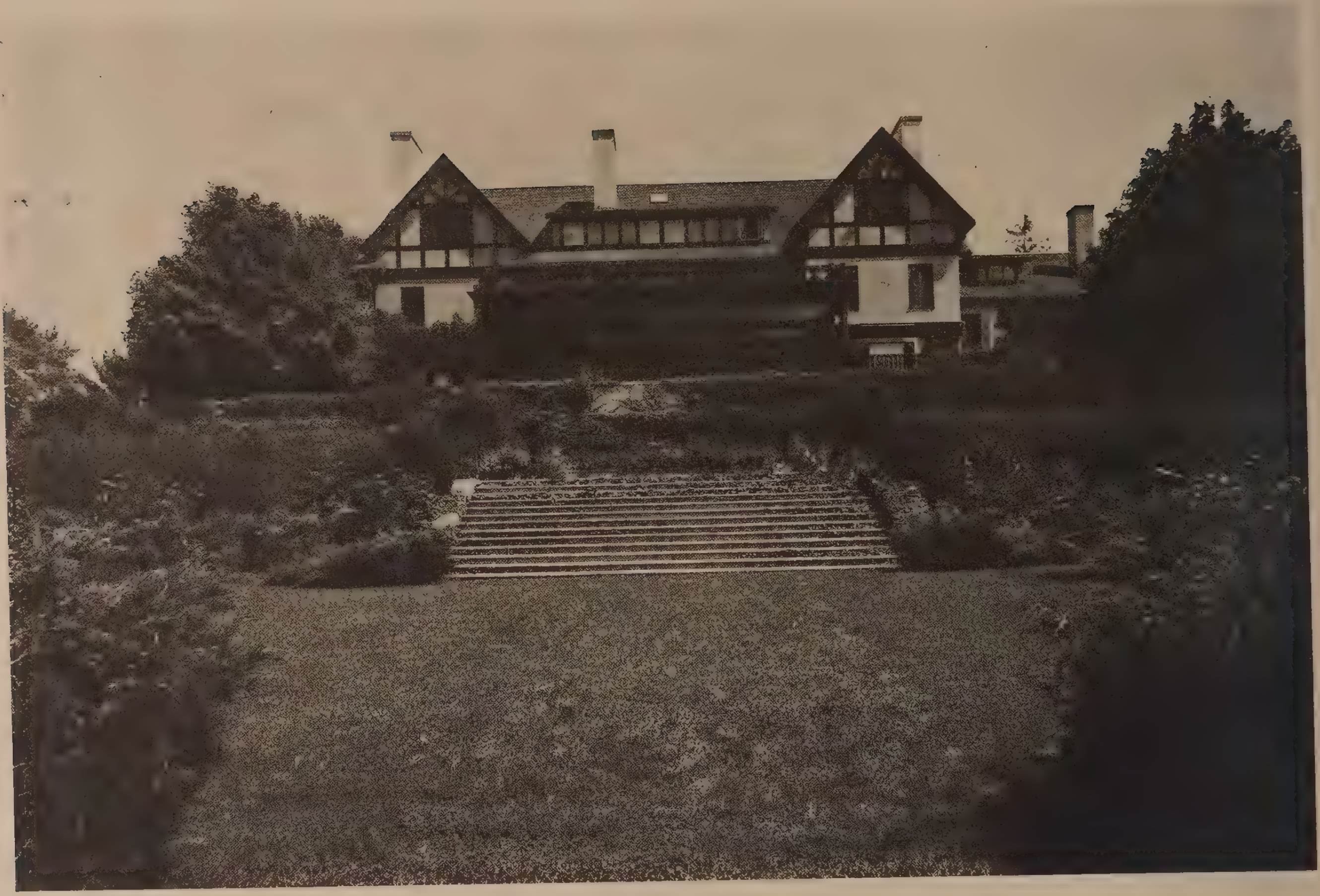


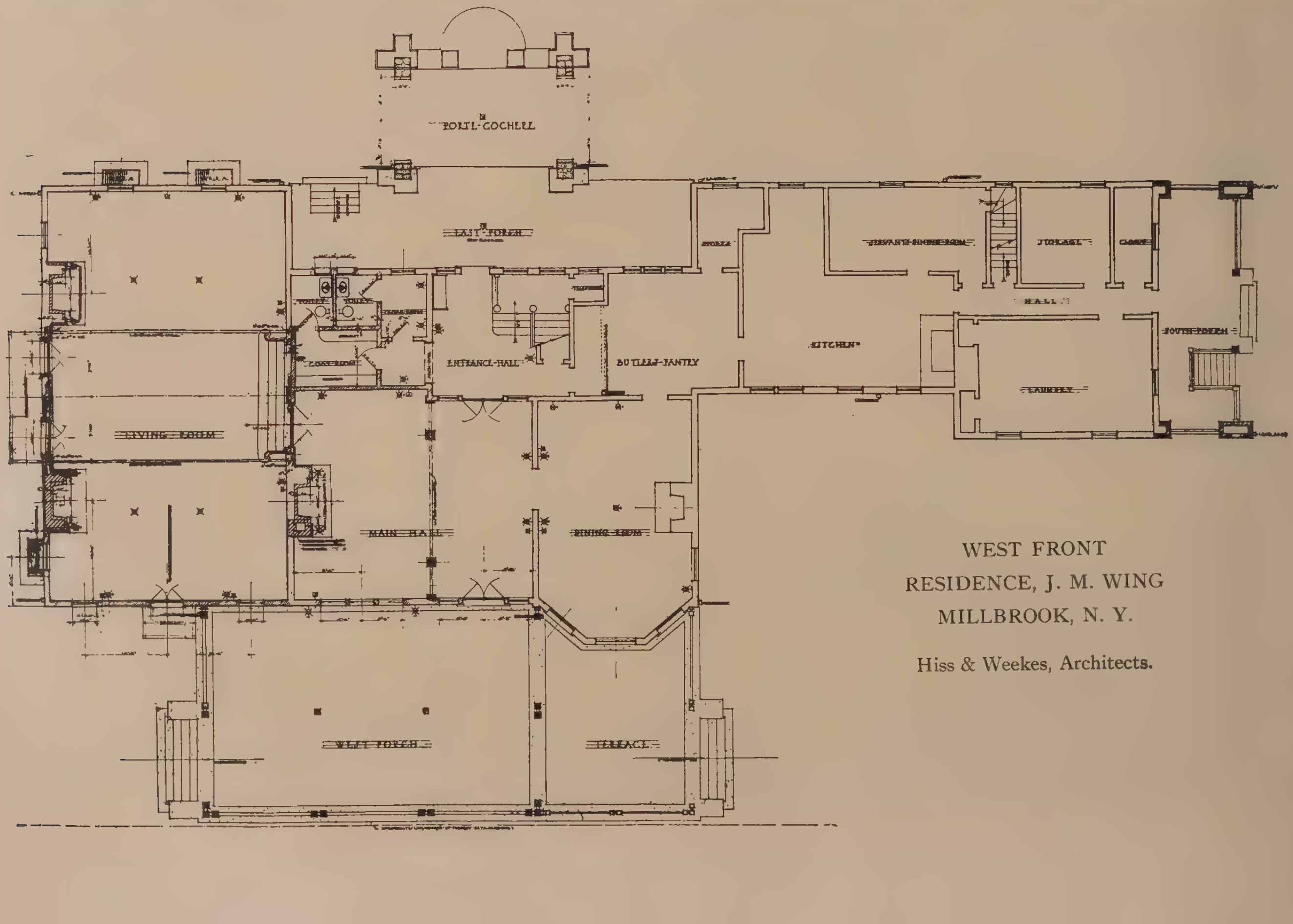
RESIDENCE, J. M. WING, MILLBROOK, N. Y. Hiss & Weekes, Architects.



RESIDENCE, J. M. WING, MILLBROOK, N. Y.

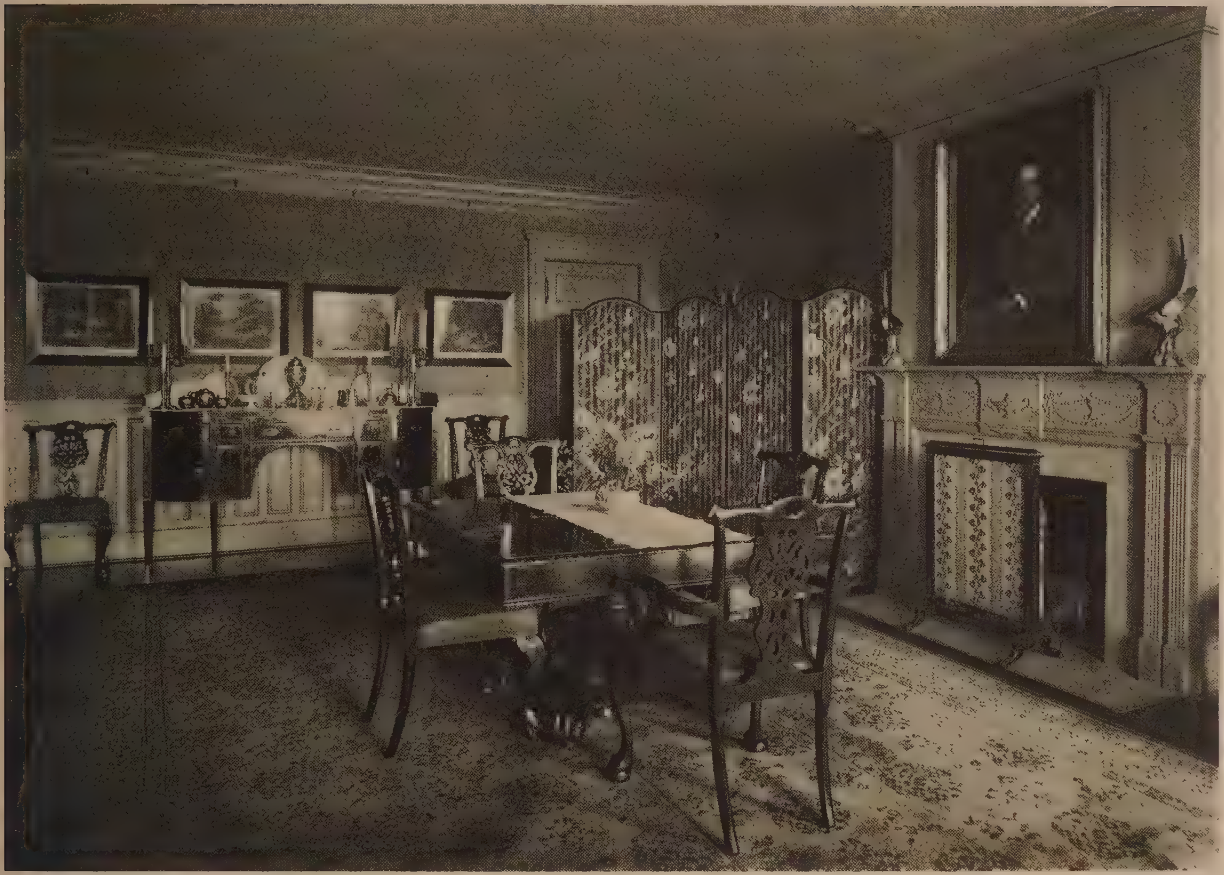
Hiss and Weekes, Architects.



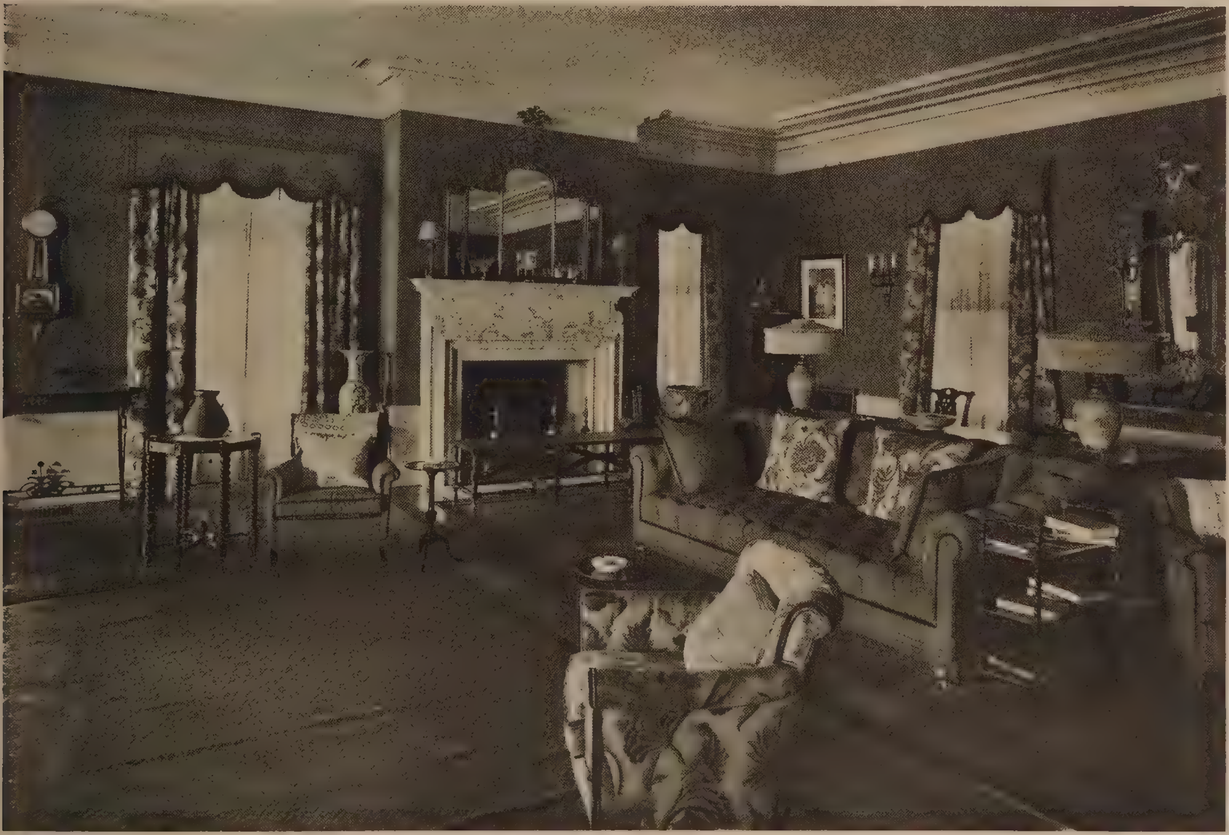


WEST FRONT
RESIDENCE, J. M. WING
MILLBROOK, N. Y.

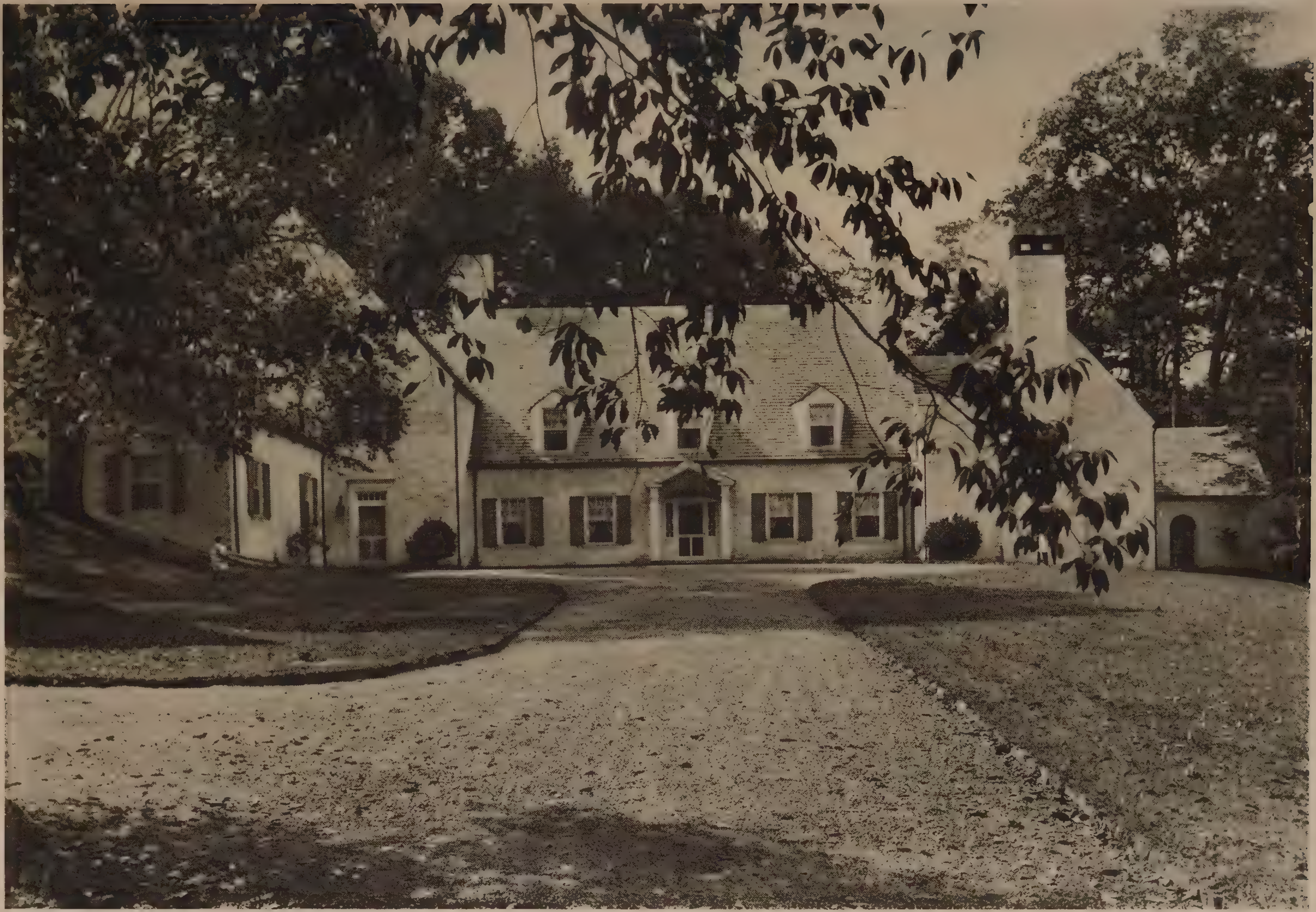
Hiss & Weekes, Architects.



DINING–ROOM.

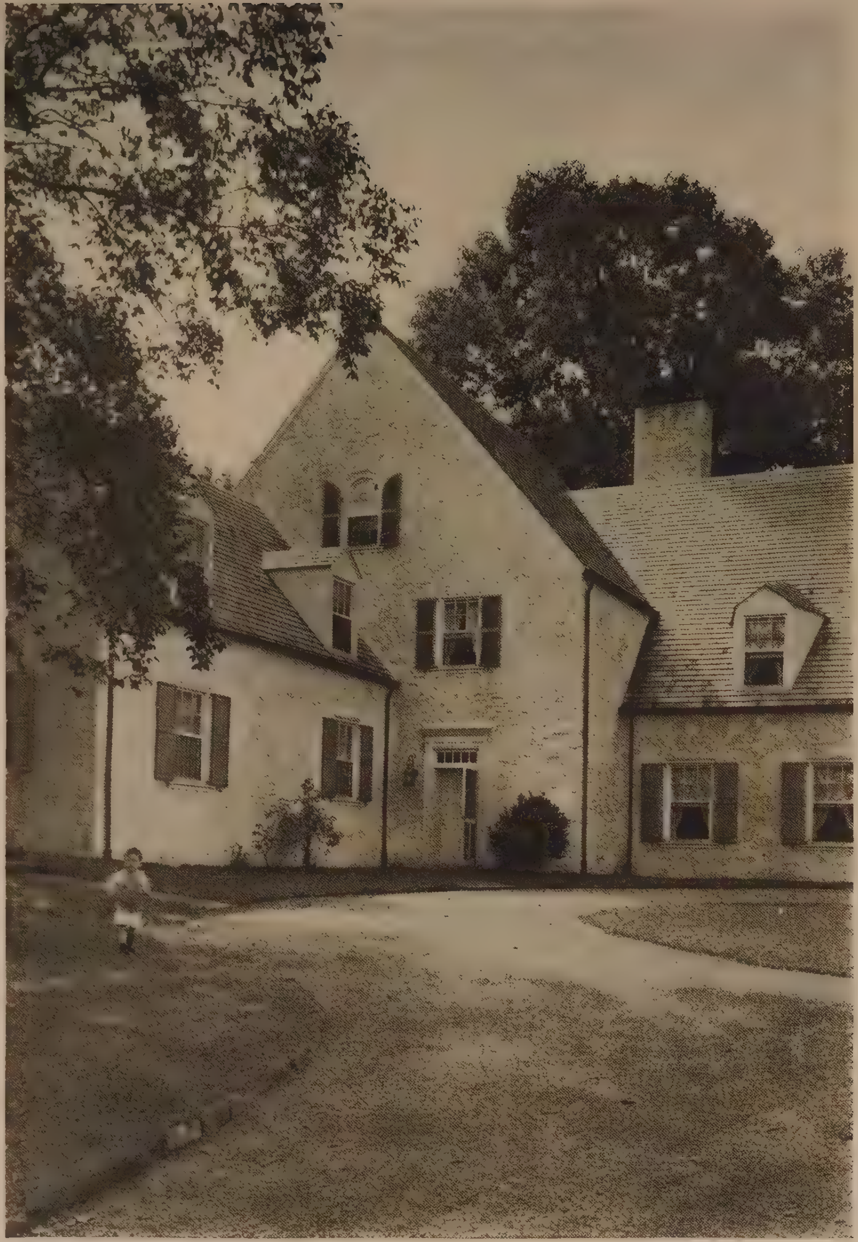


LIVING–ROOM. RESIDENCE, J. M. WING, MILLBROOK, N. Y. Hiss & Weekes, Architects.

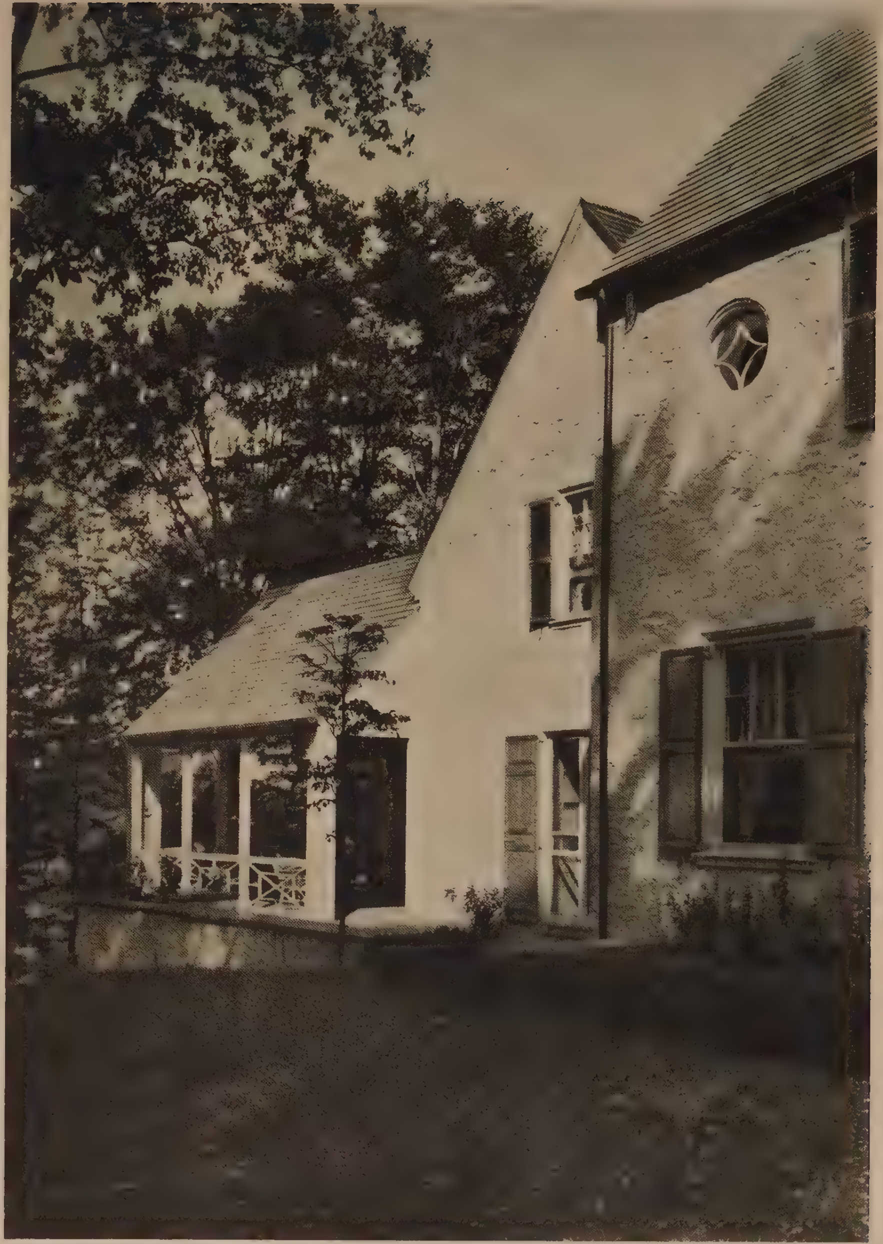


RESIDENCE, CHARLES E. BRINLEY, CHESTNUT HILL, PHILADELPHIA, PA.

Tilden & Register, Architects.



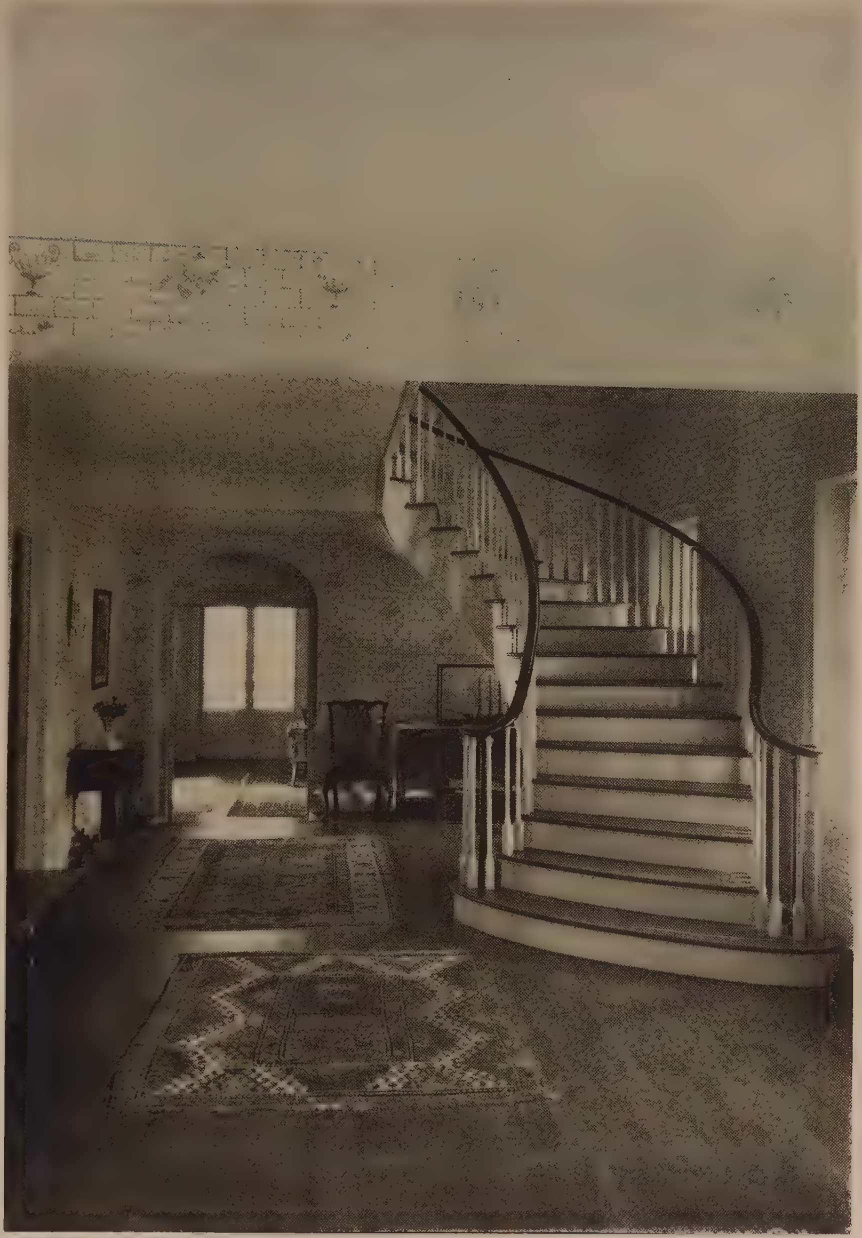
SERVICE WING.



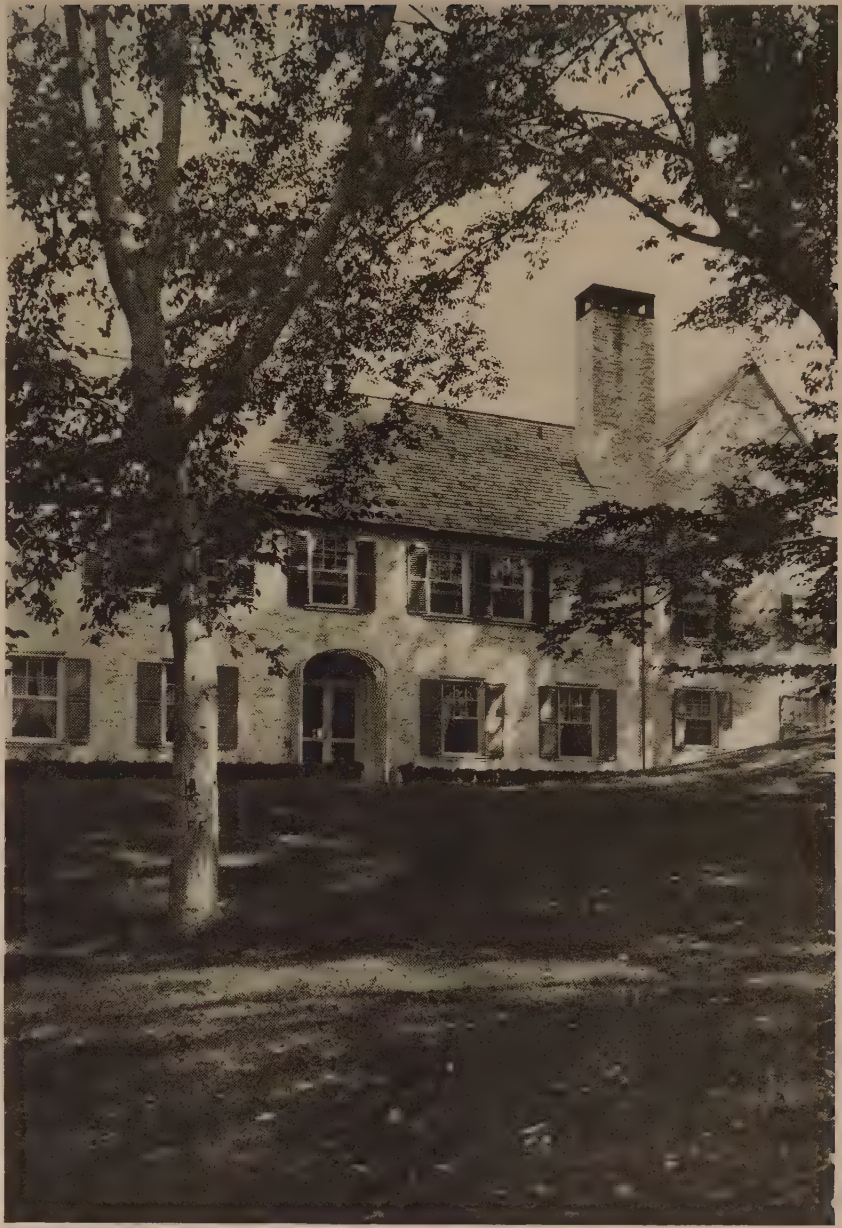
LIVING–ROOM PORCH.

Tilden & Register, Architects.

RESIDENCE, CHARLES E. BRINLEY, CHESTNUT HILL, PHILADELPHIA, PA.



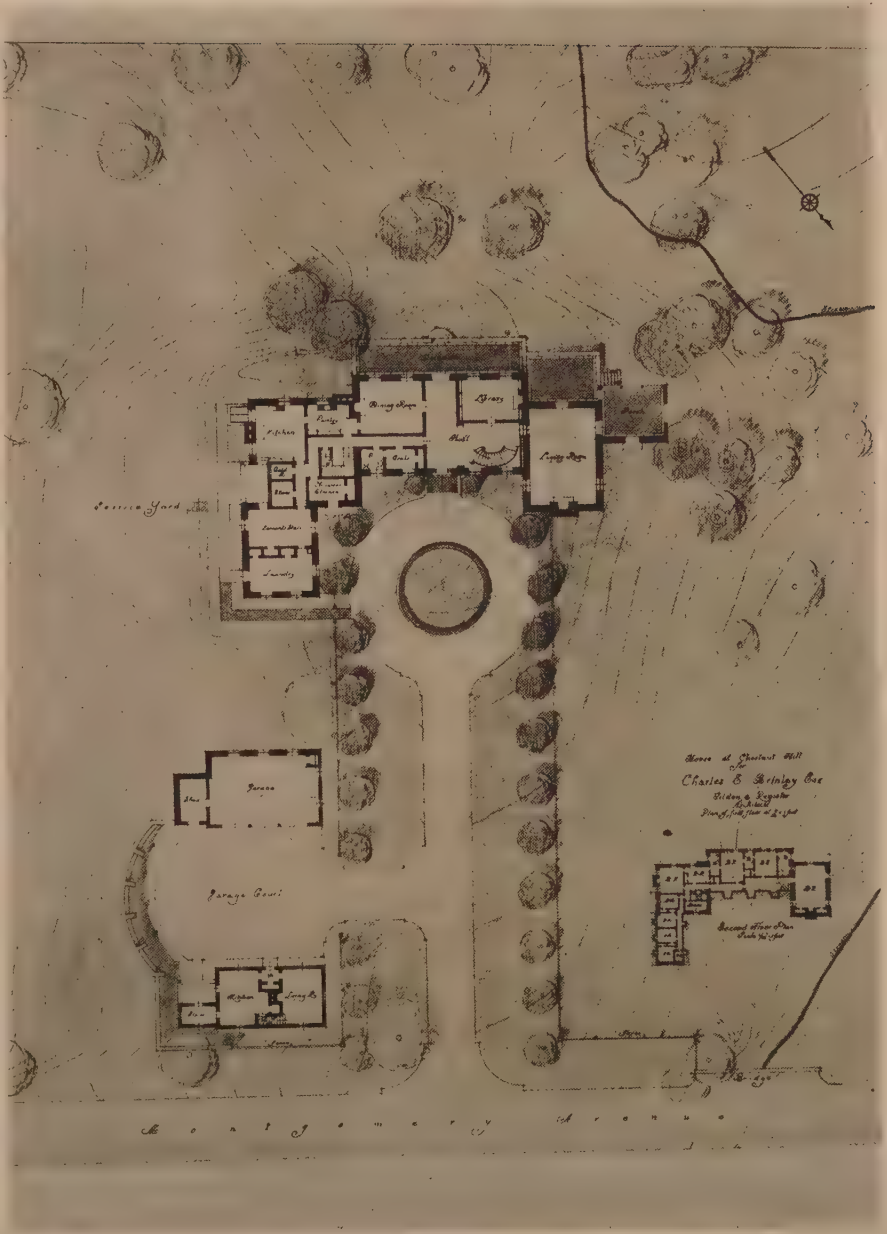
MAIN HALL.



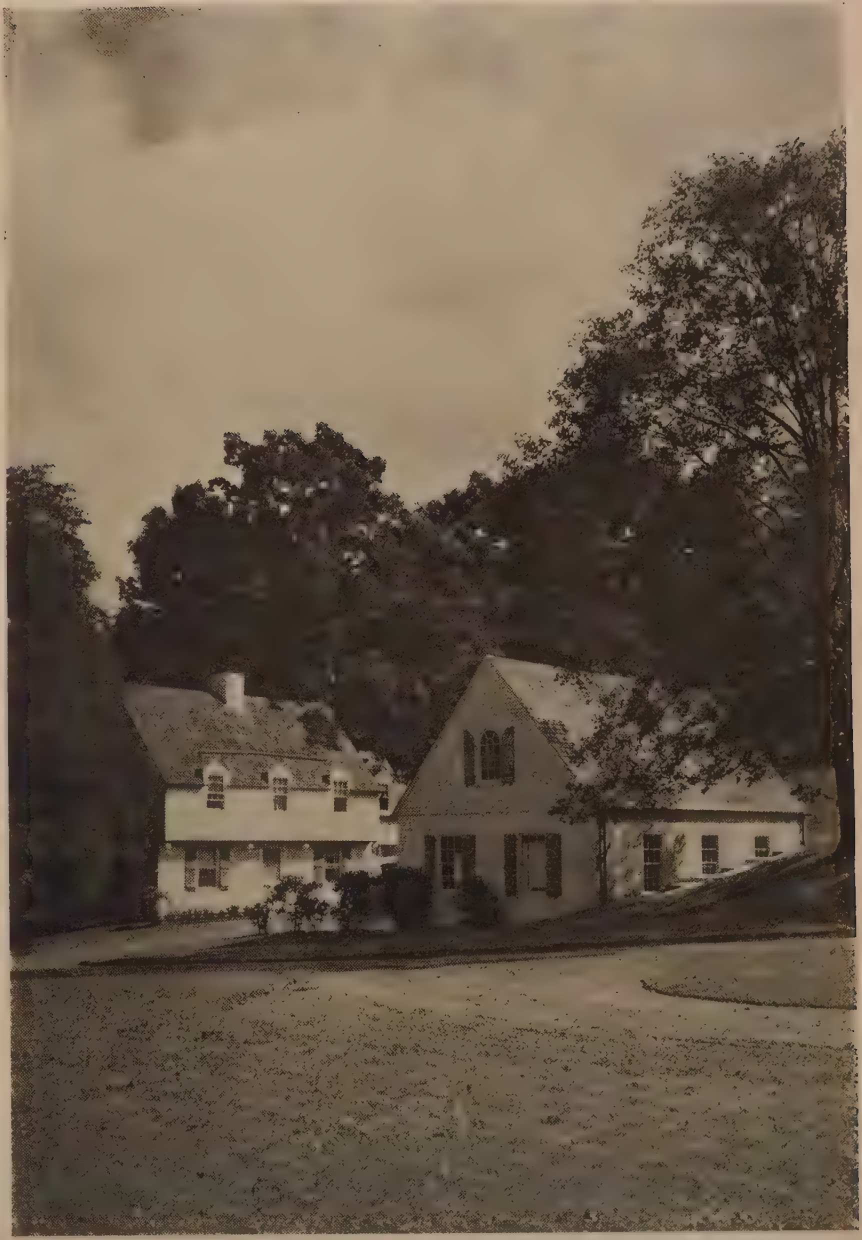
TERRACE.

Tilden & Register, Architects.

RESIDENCE, CHARLES E. BRINLEY, CHESTNUT HILL, PHILADELPHIA, PA.



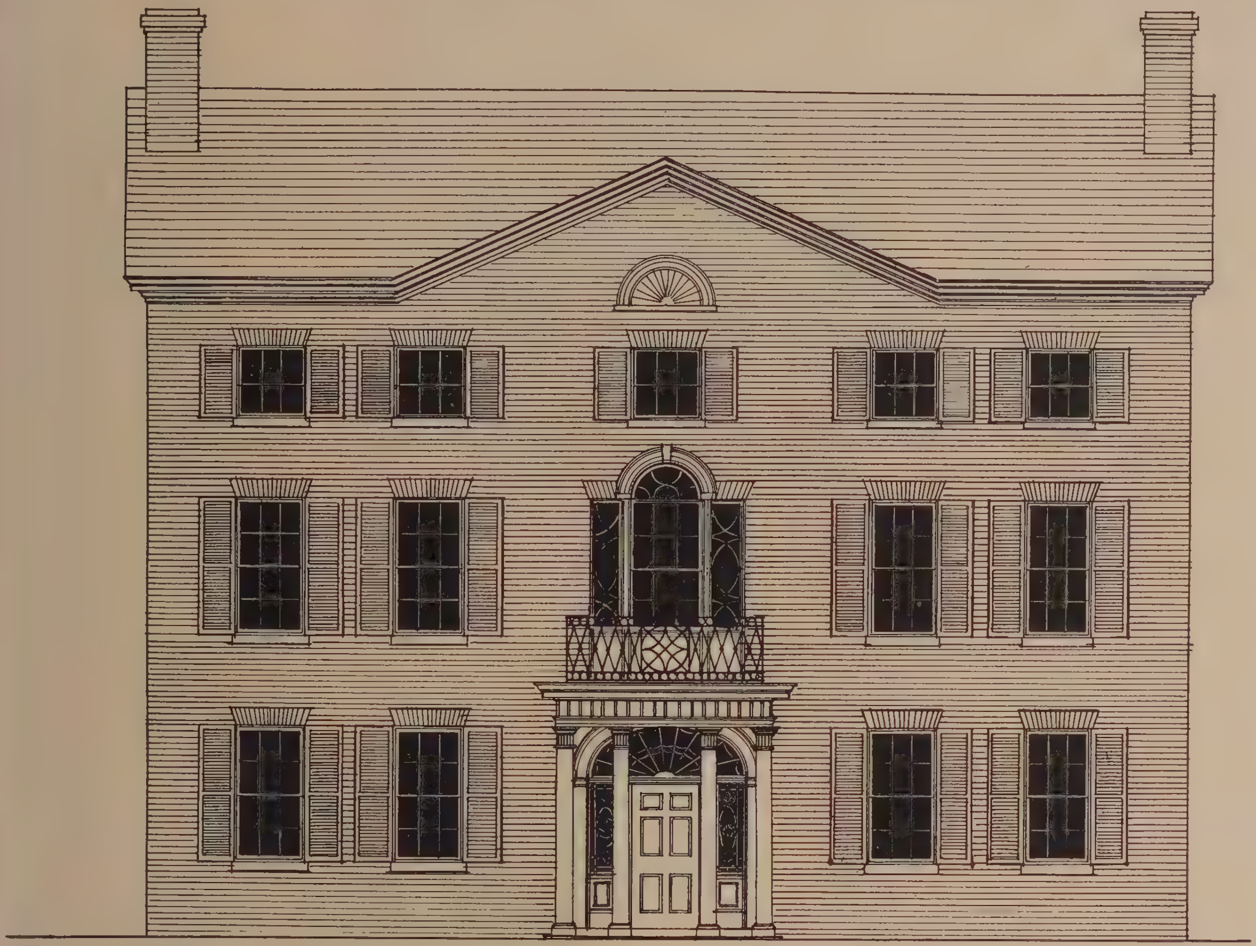
PLAN OF ESTATE.



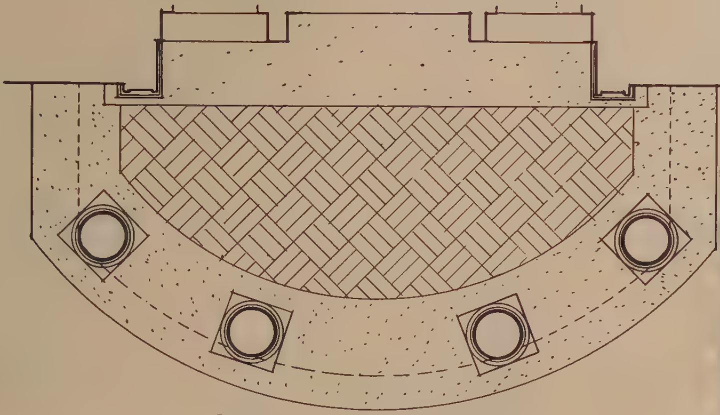
COTTAGE AND GARAGE.

Tilden & Register, Architects

RESIDENCE, CHARLES E. BRINLEY, CHESTNUT HILL, PHILADELPHIA, PA.



Elevation



Plan of Porch

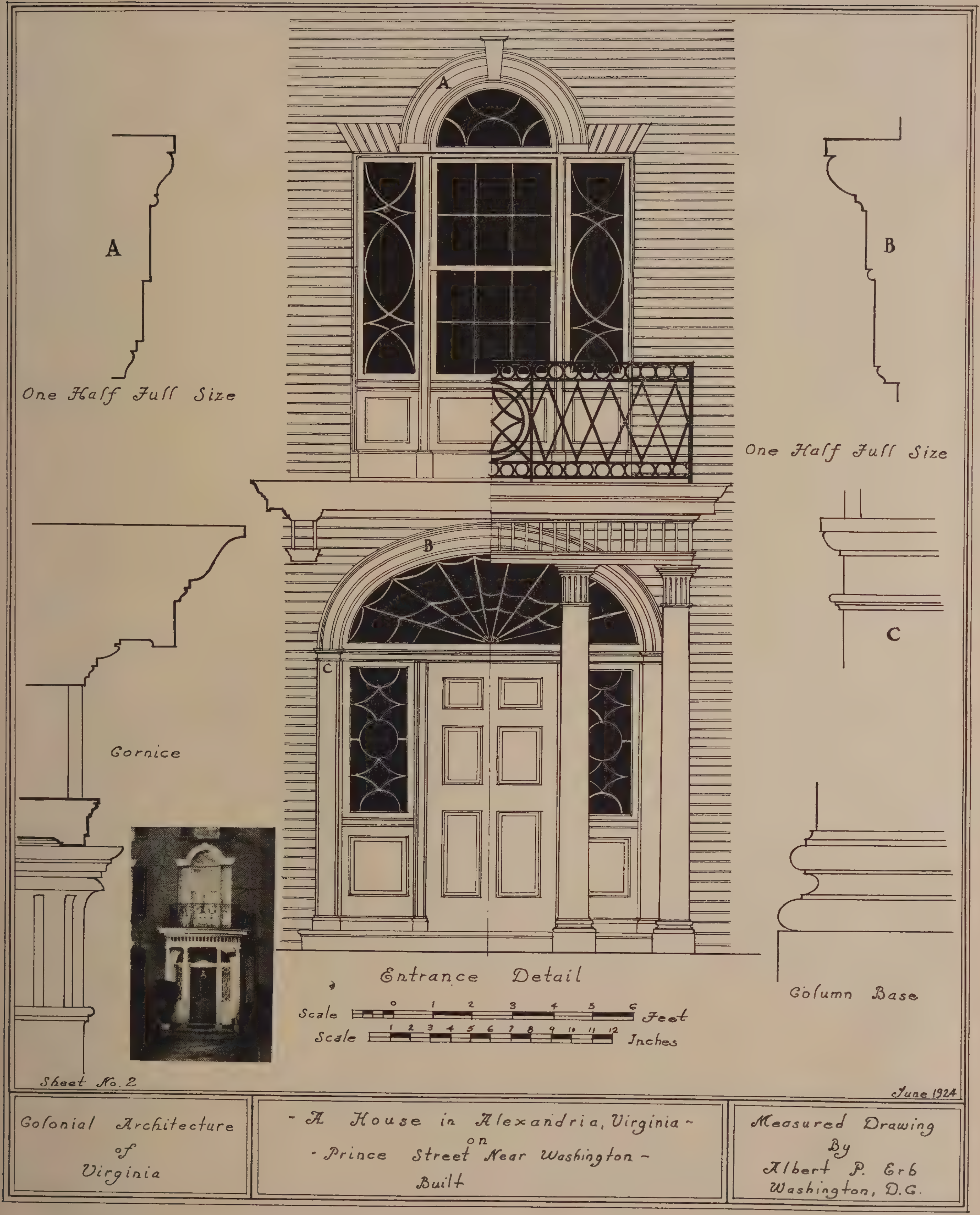
Sheet No. 1

June 1924.

Colonial Architecture
of
Virginia

~ A House in Alexandria, Virginia ~
on
~ Prince Street Near Washington ~
Built

Measured Drawing
By
Albert P. Erb
Washington, D.C.



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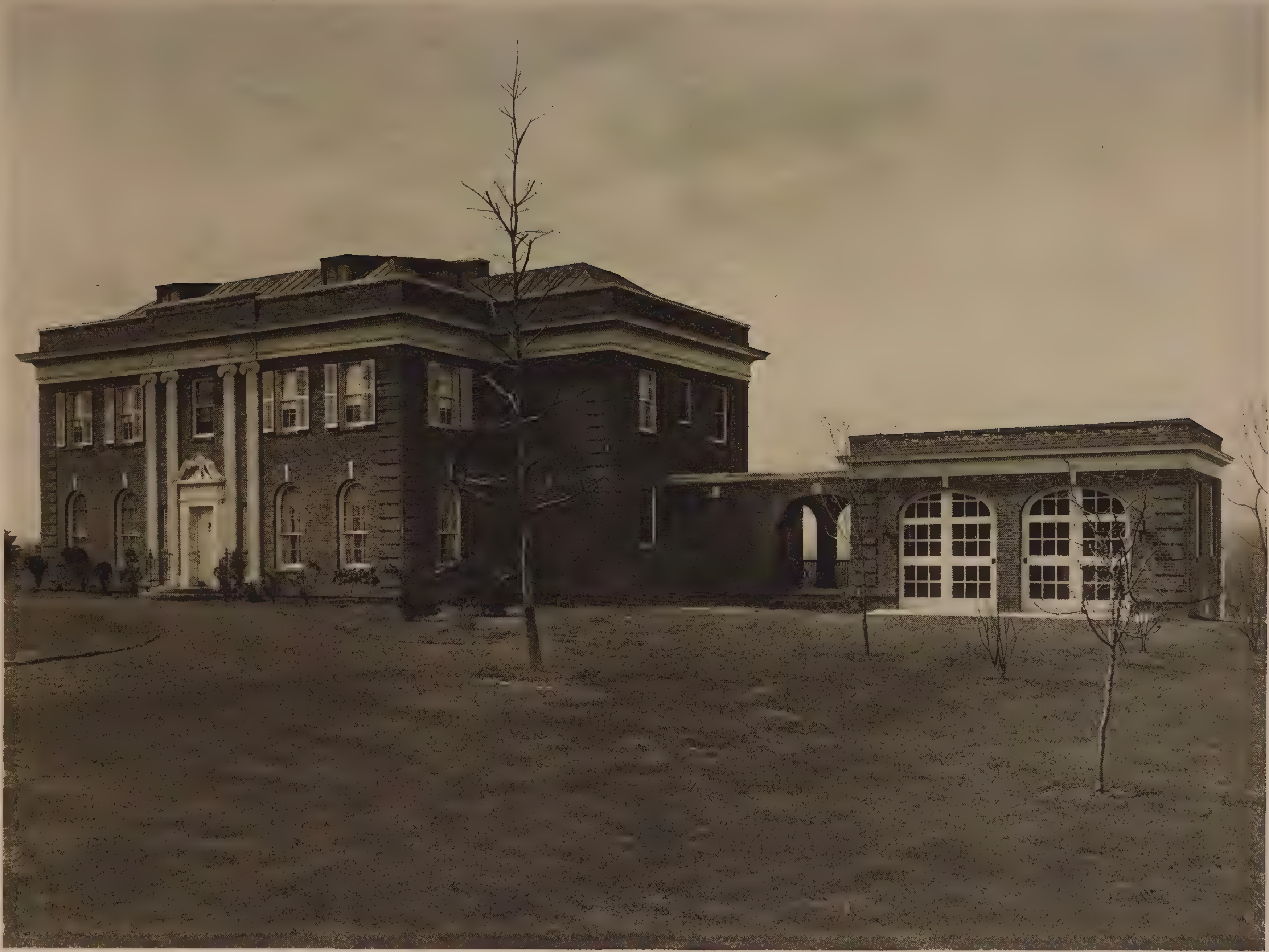
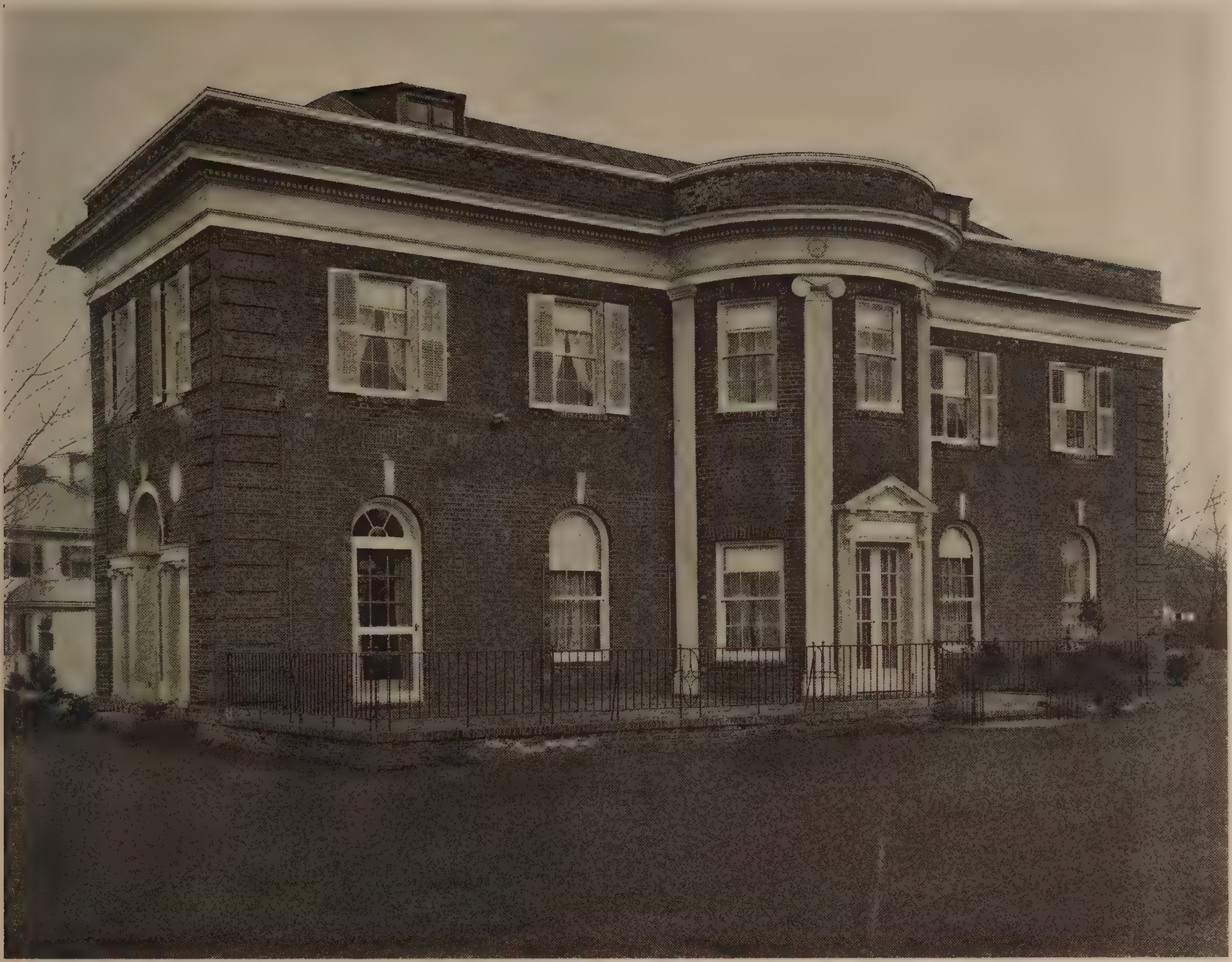
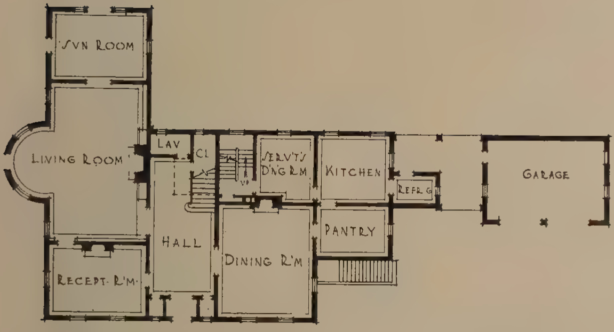


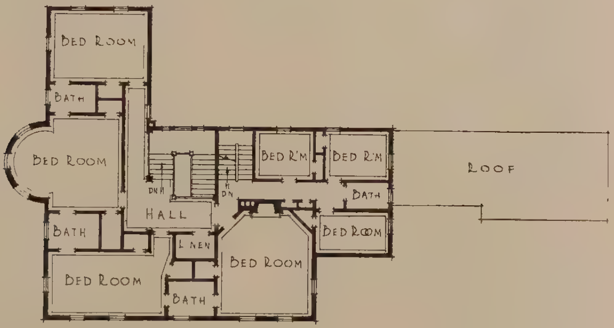
RESIDENCE, SHIRLEY W. MORGAN, PRINCETON, N. J.

Park & Morgan, Architects.





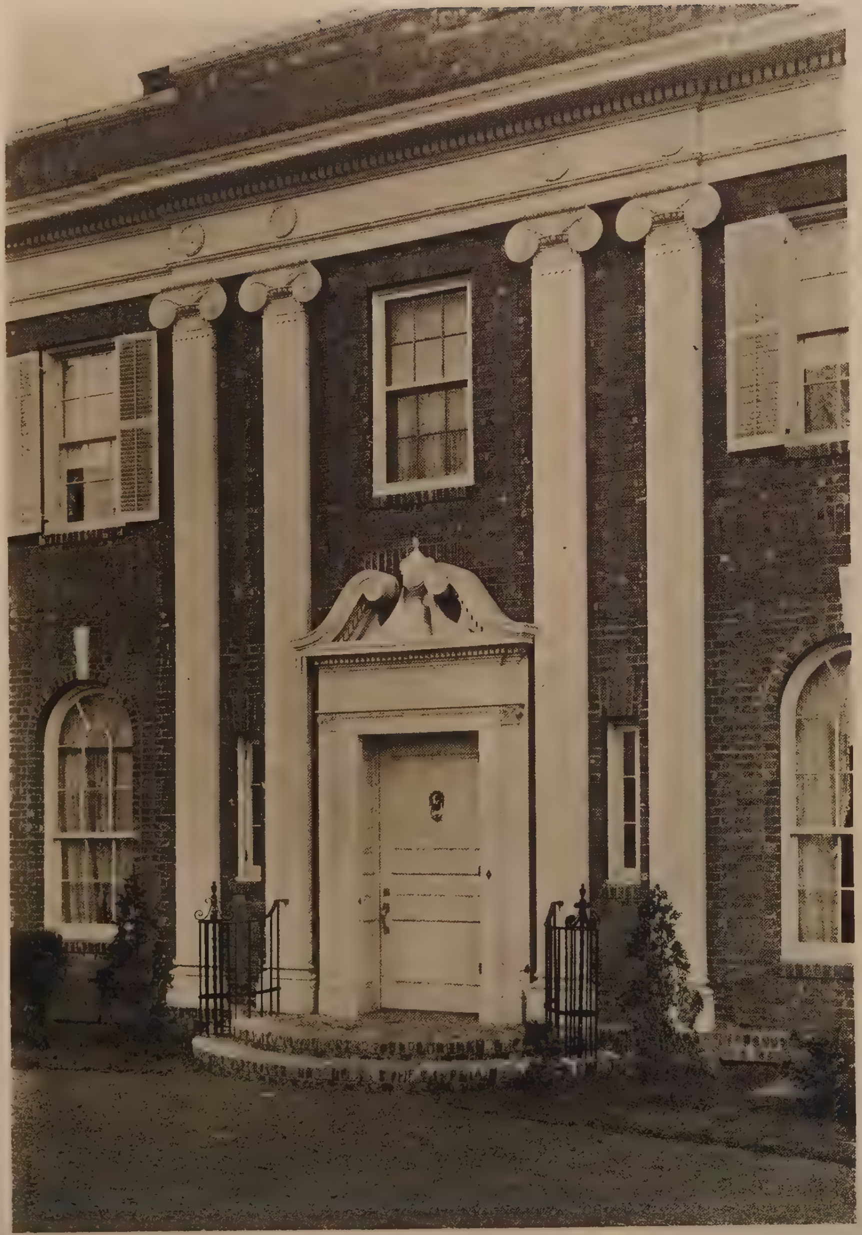
FIRST FLOOR PLAN



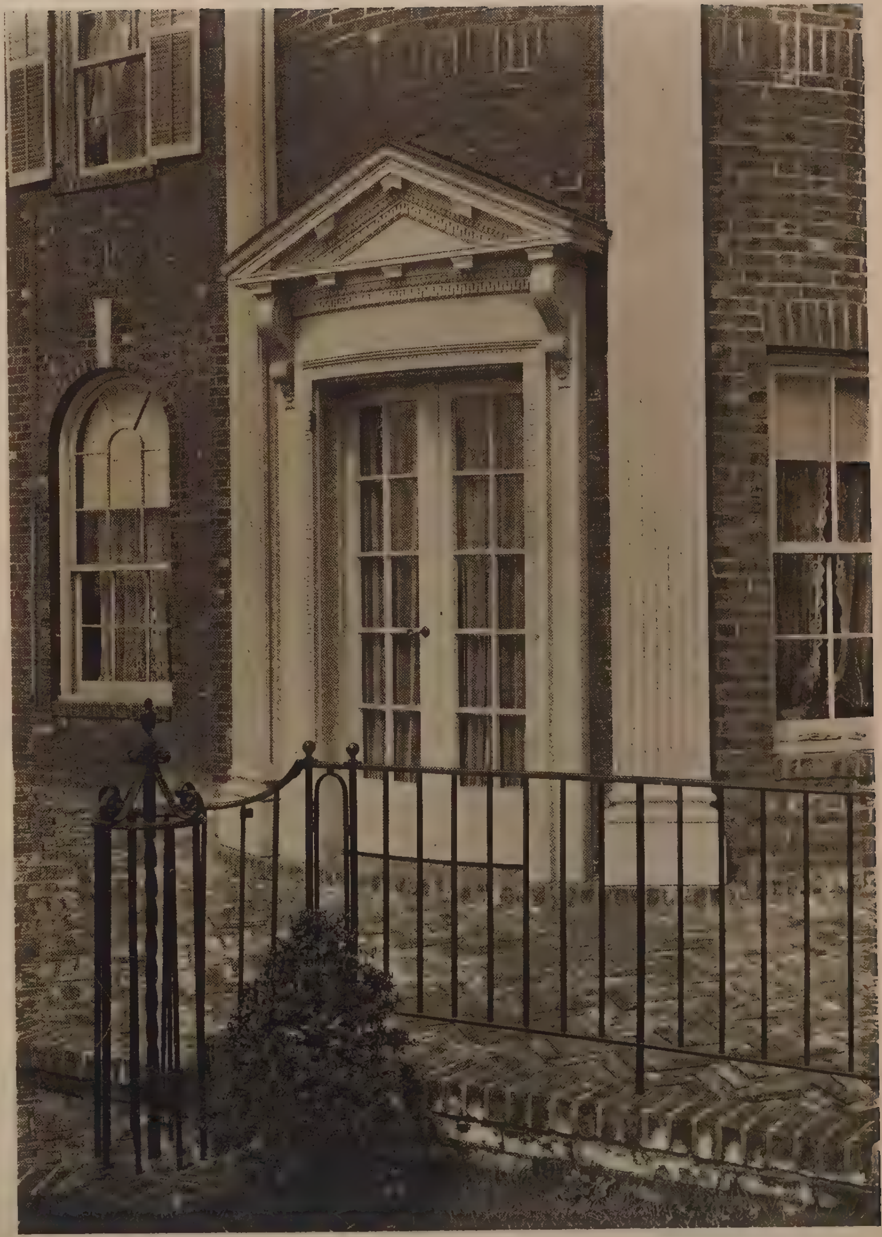
SECOND FLOOR PLAN

TERRACE, RESIDENCE, SHIRLEY W. MORGAN, PRINCETON, N. J.

Park & Morgan, Architects.



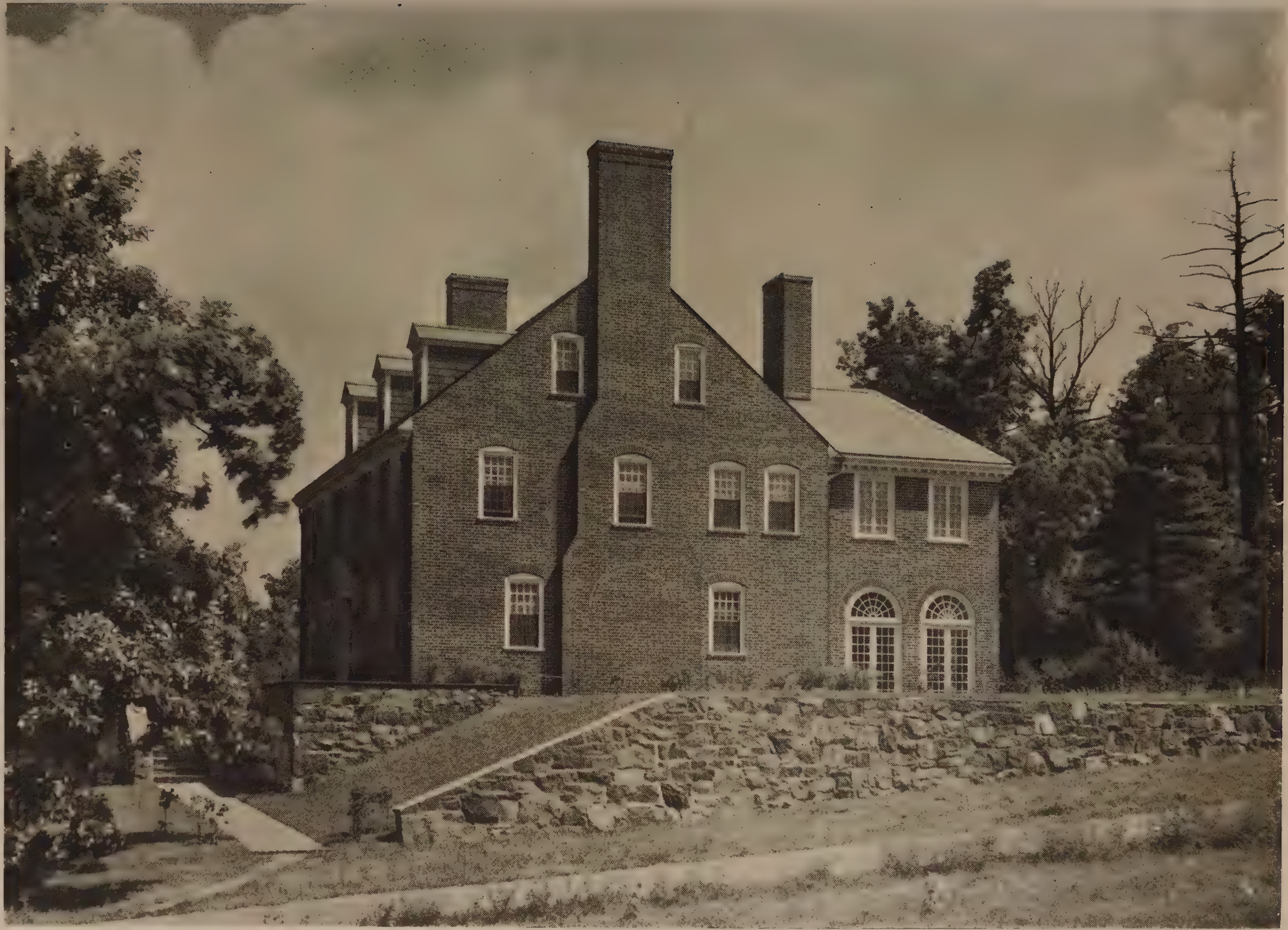
MAIN ENTRANCE DETAIL.



TERRACE DETAIL.

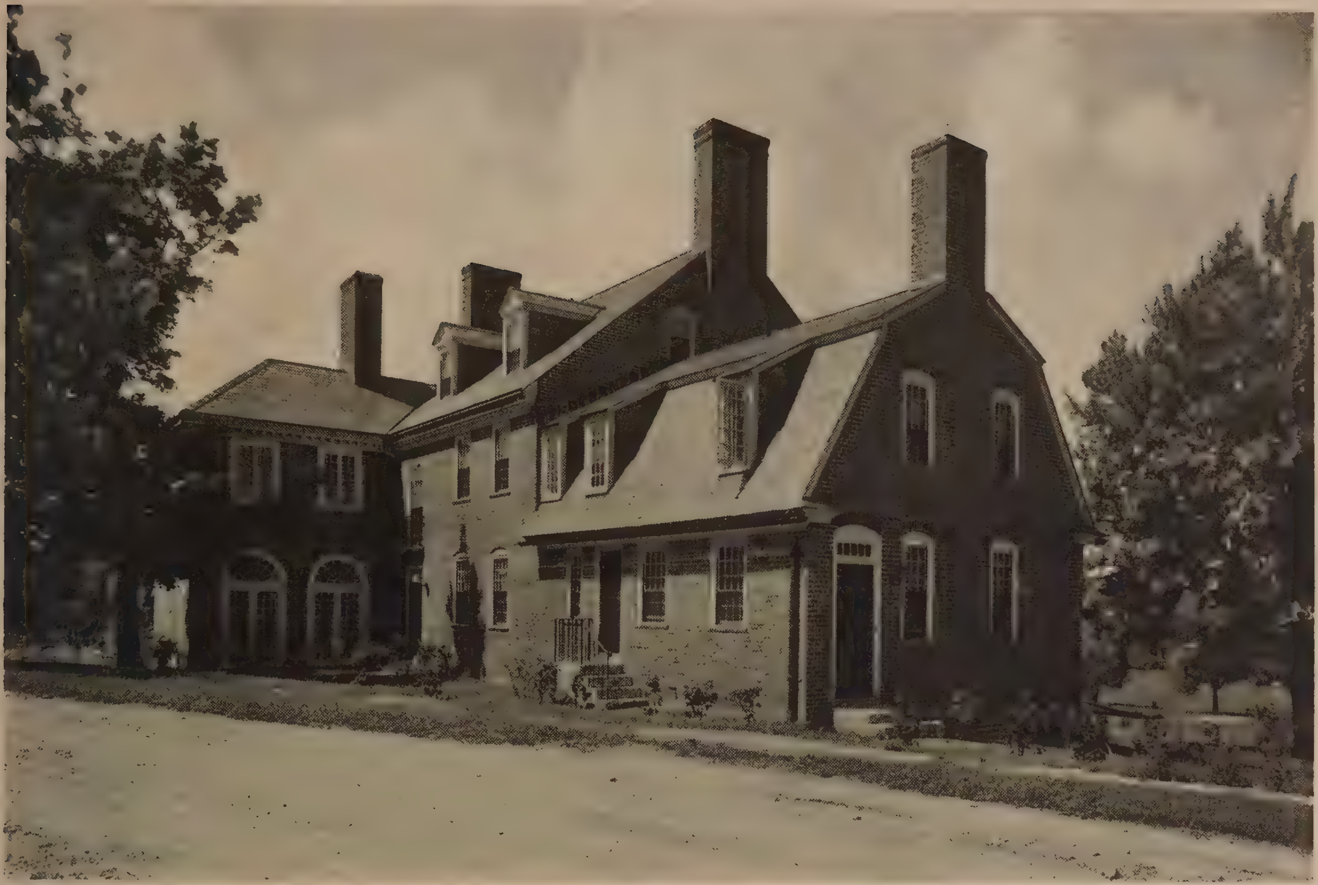
Park & Morgan, Architects.

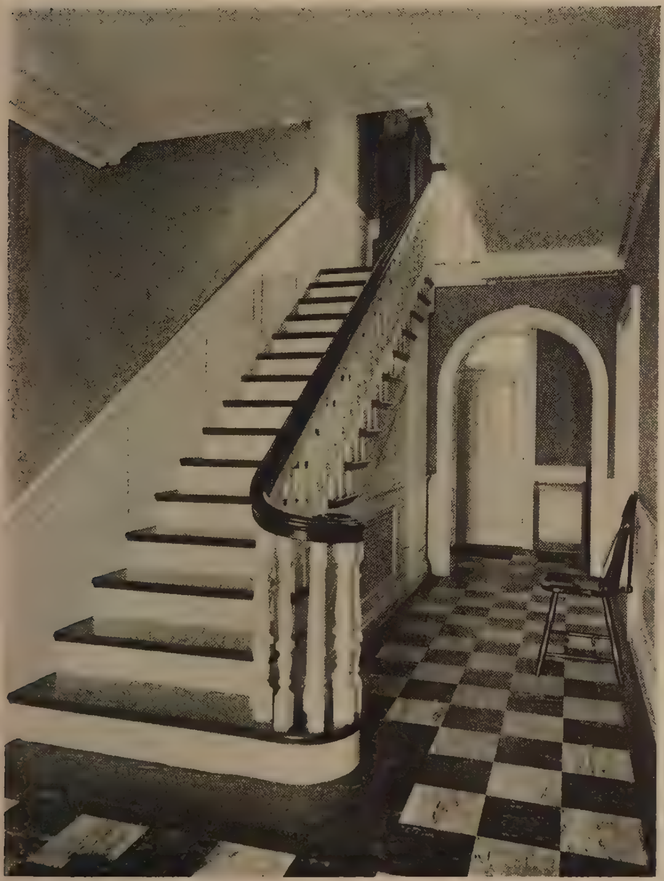
RESIDENCE, SHIRLEY W. MORGAN, PRINCETON, N. J.



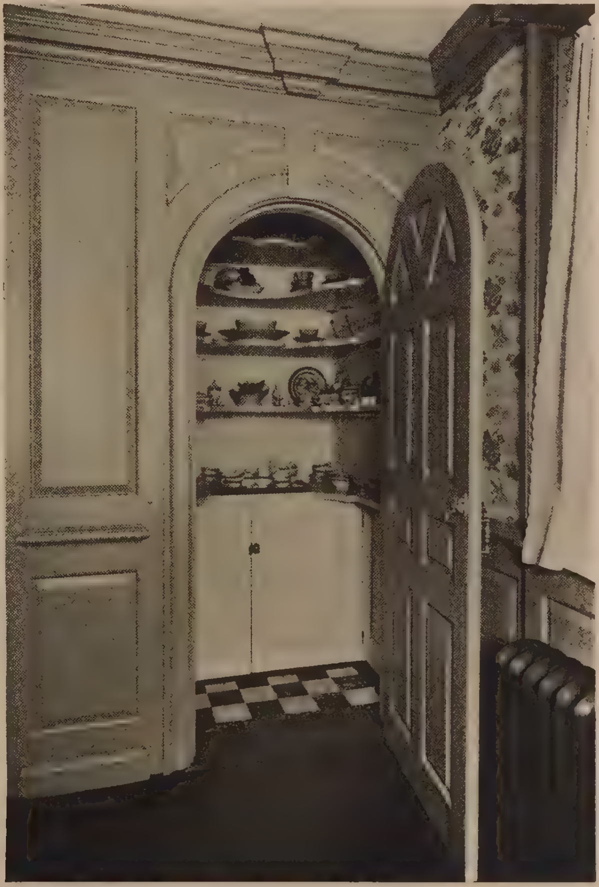
RESIDENCE, DANA HALL SCHOOL (for a teacher and several pupils), WELLESLEY, MASS

Cram & Ferguson, Architects



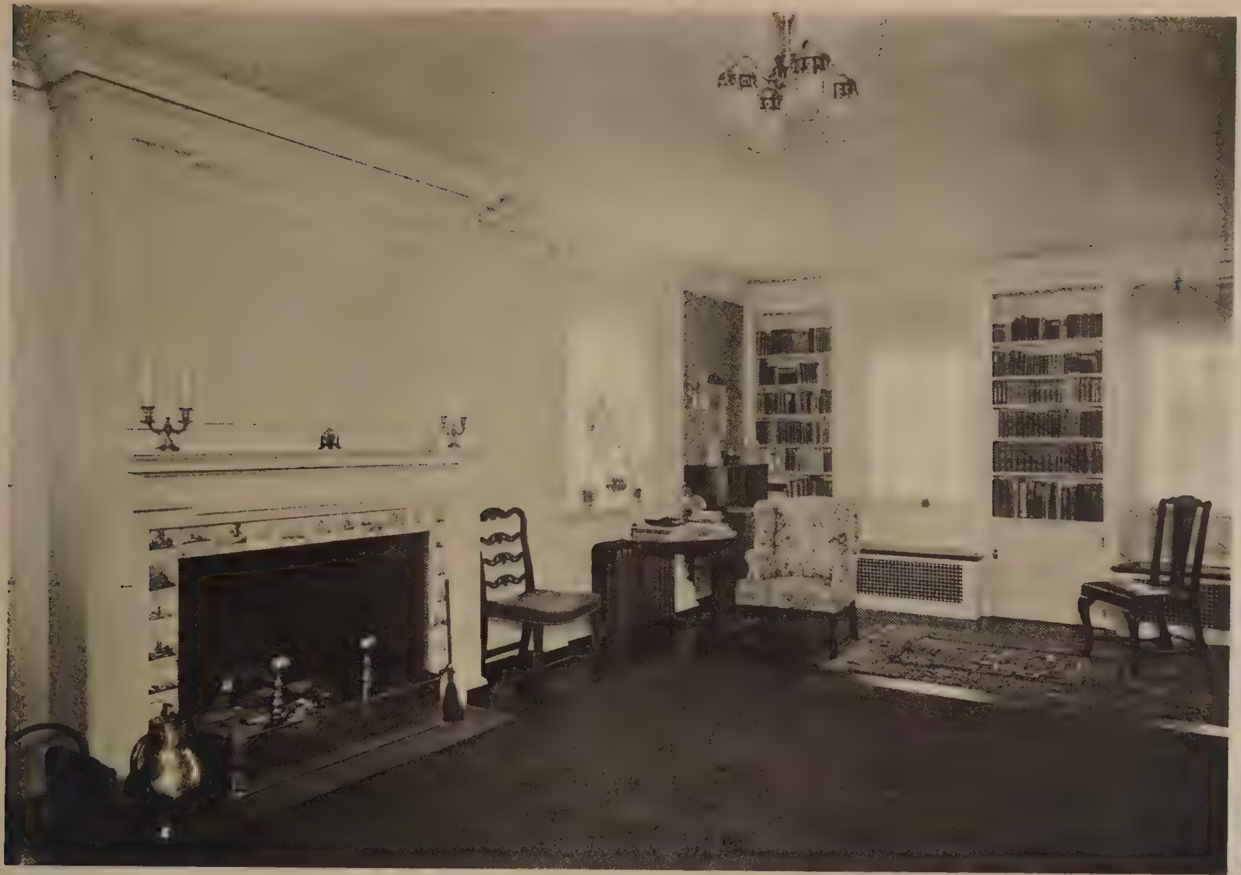


HALL AND STAIRWAY.

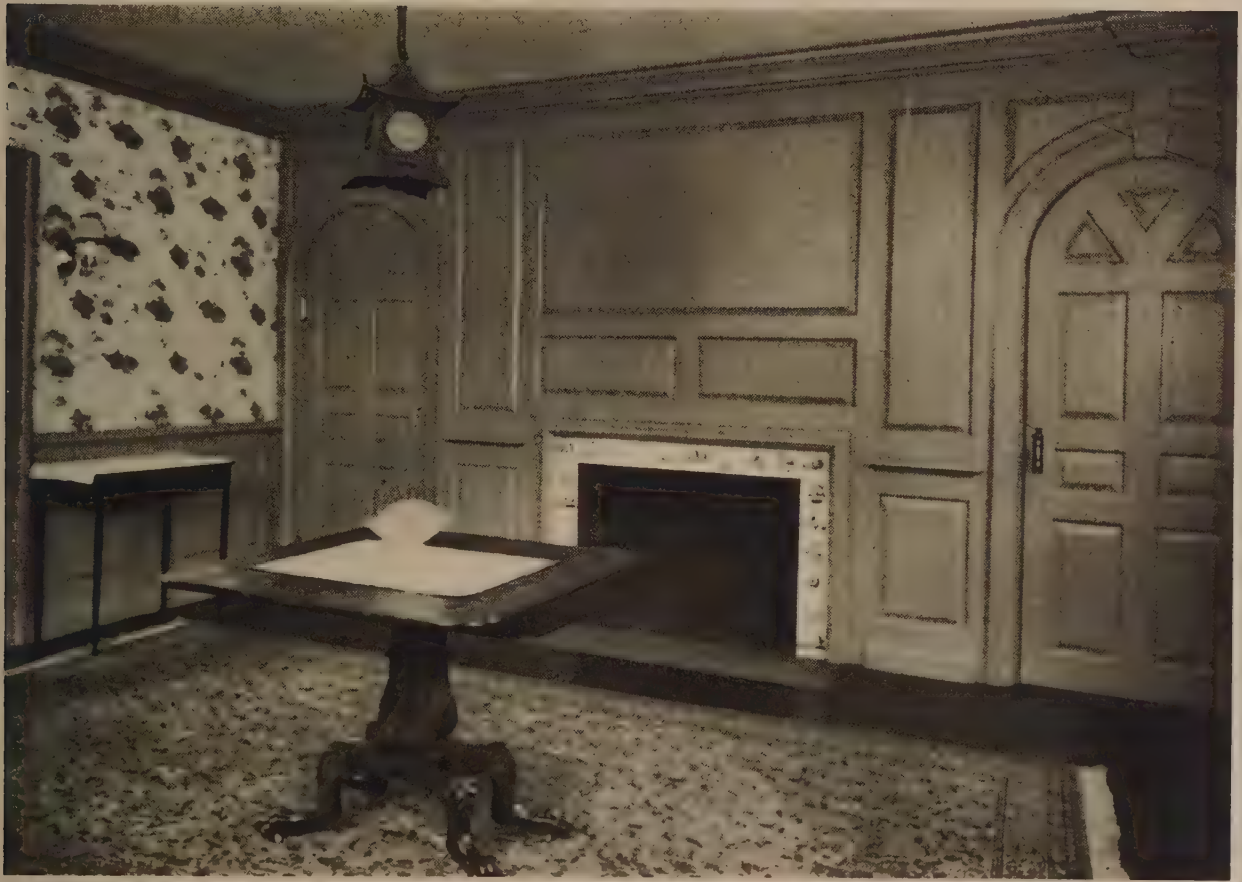


CUPBOARD IN DINING-ROOM.

RESIDENCE, DANA HALL SCHOOL (FOR A TEACHER AND SEVERAL PUPILS), WELLESLEY, MASS.
Cram & Ferguson, Architects.



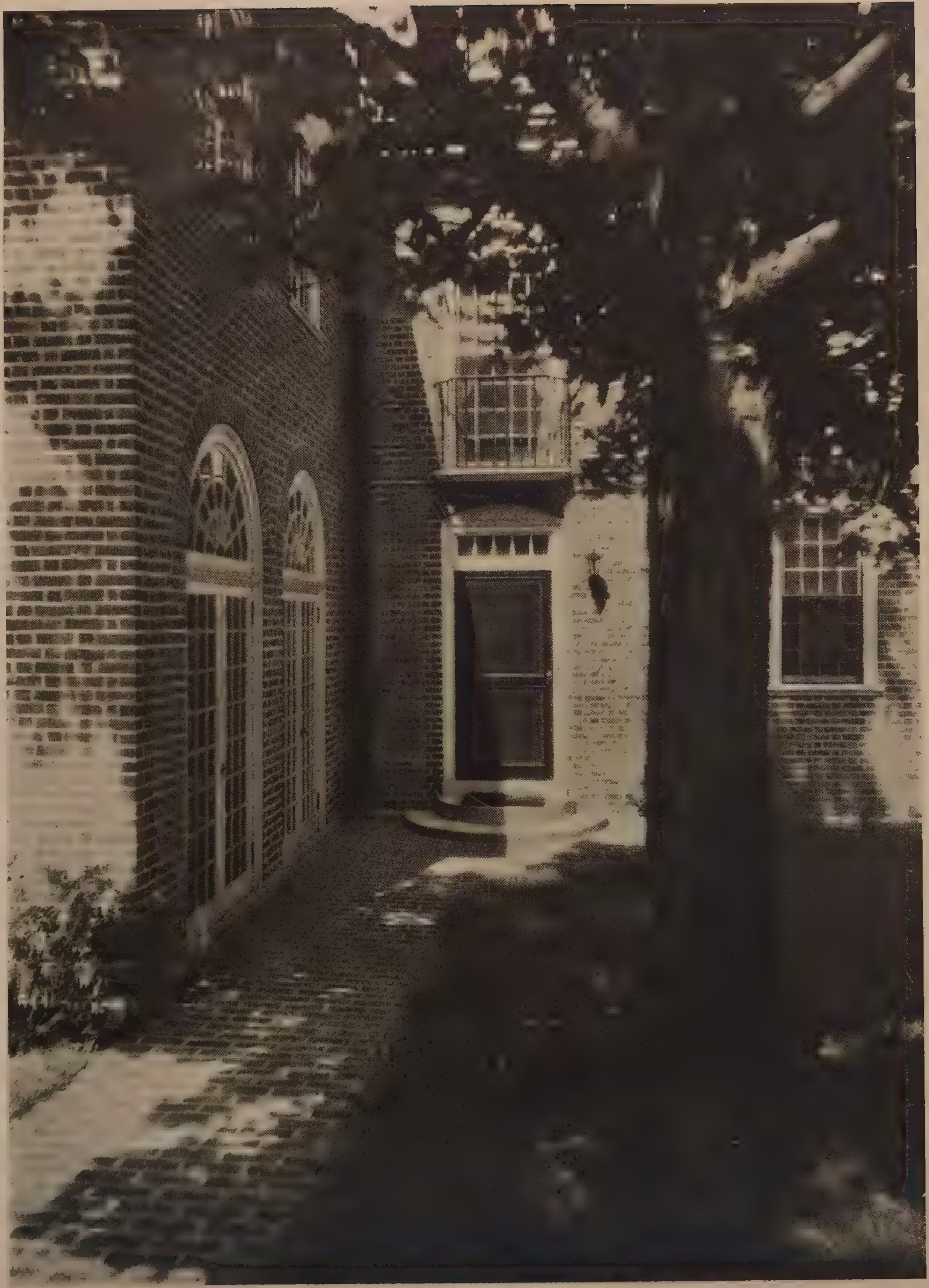
LIVING-ROOM.

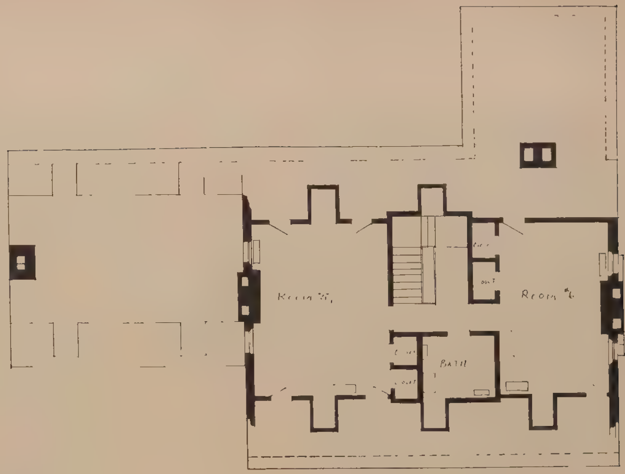


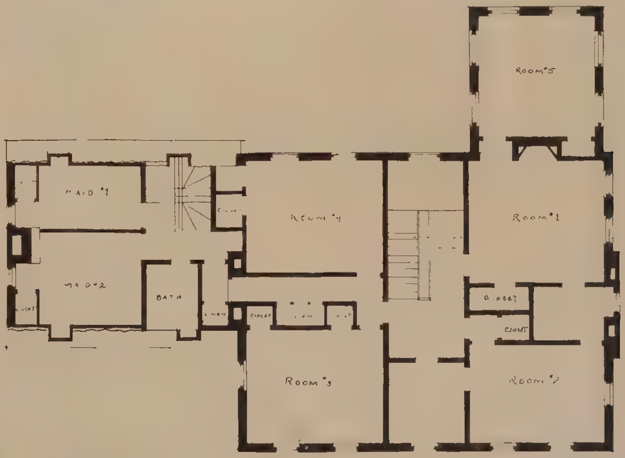
DINING-ROOM.

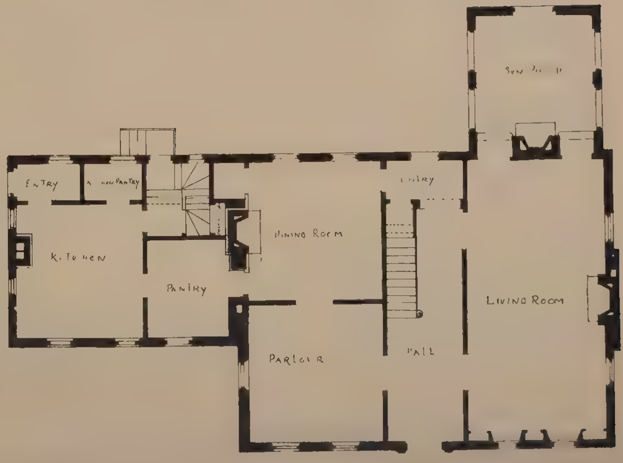
Cram & Ferguson, Architects.

RESIDENCE, DANA HALL SCHOOL (FOR A TEACHER AND SEVERAL PUPILS), WELLESLEY, MASS.



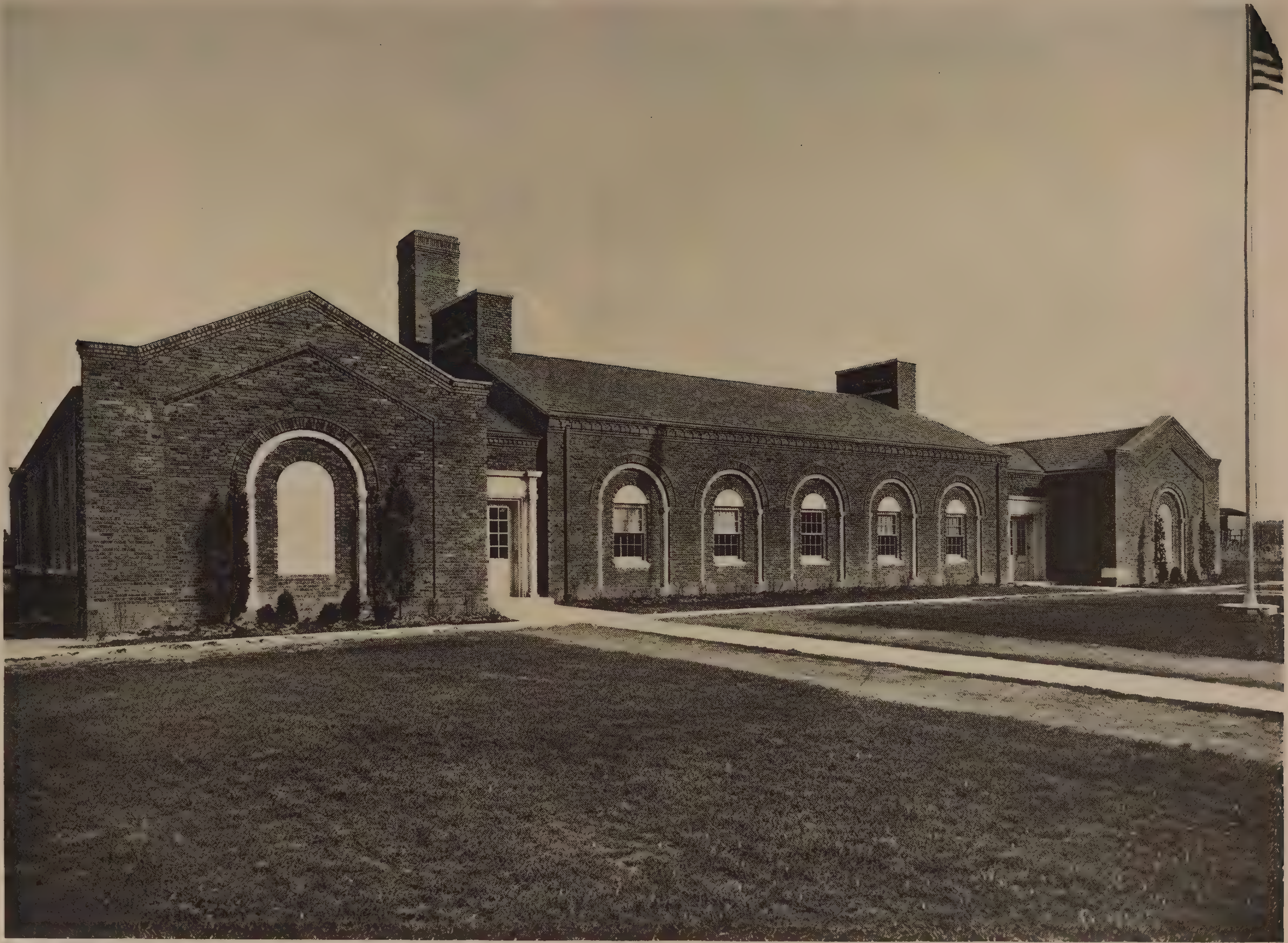




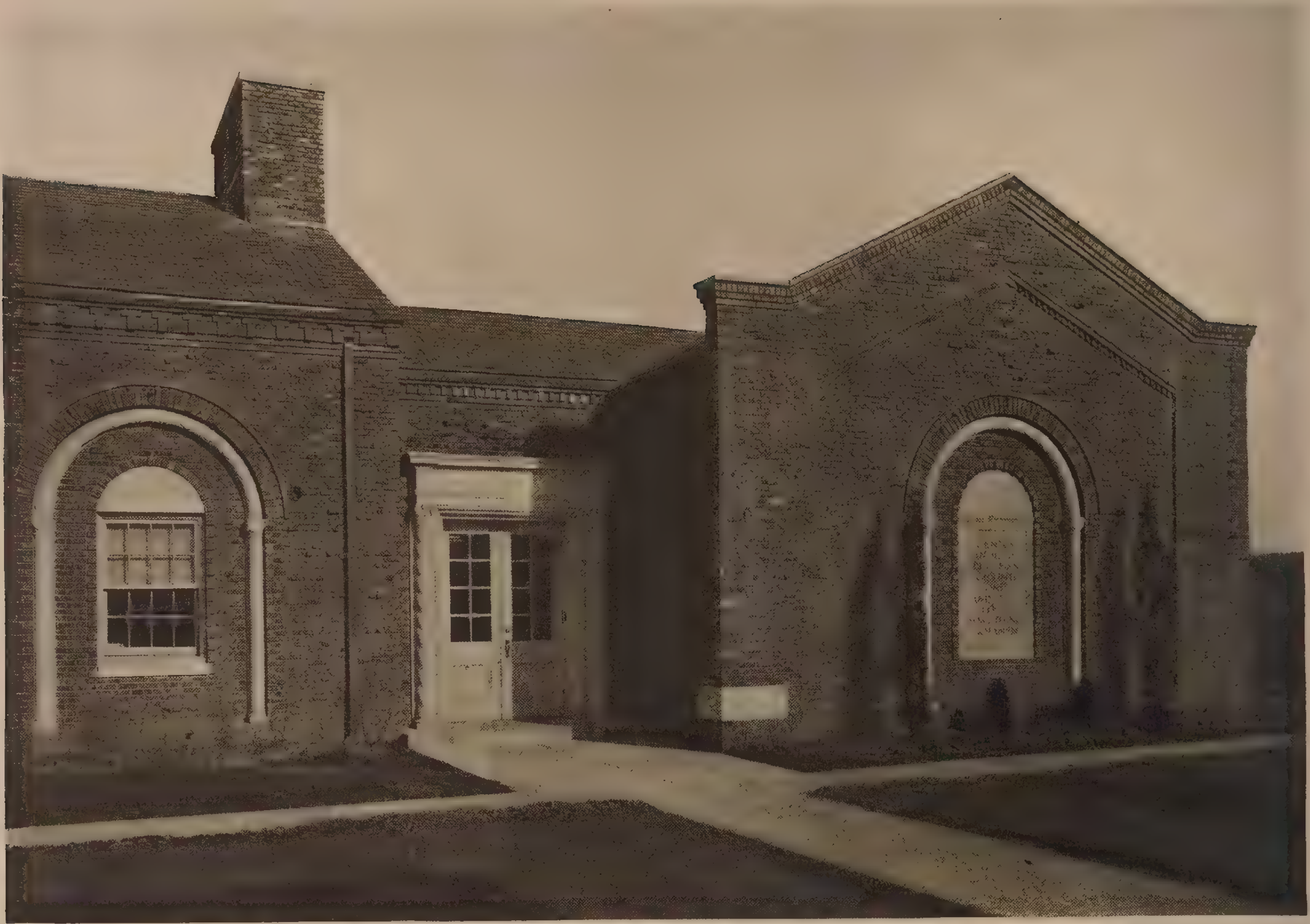


DETAIL OF EXTERIOR, RESIDENCE, DANA HALL SCHOOL (for a teacher and several pupils), WELLESLEY, MASS.

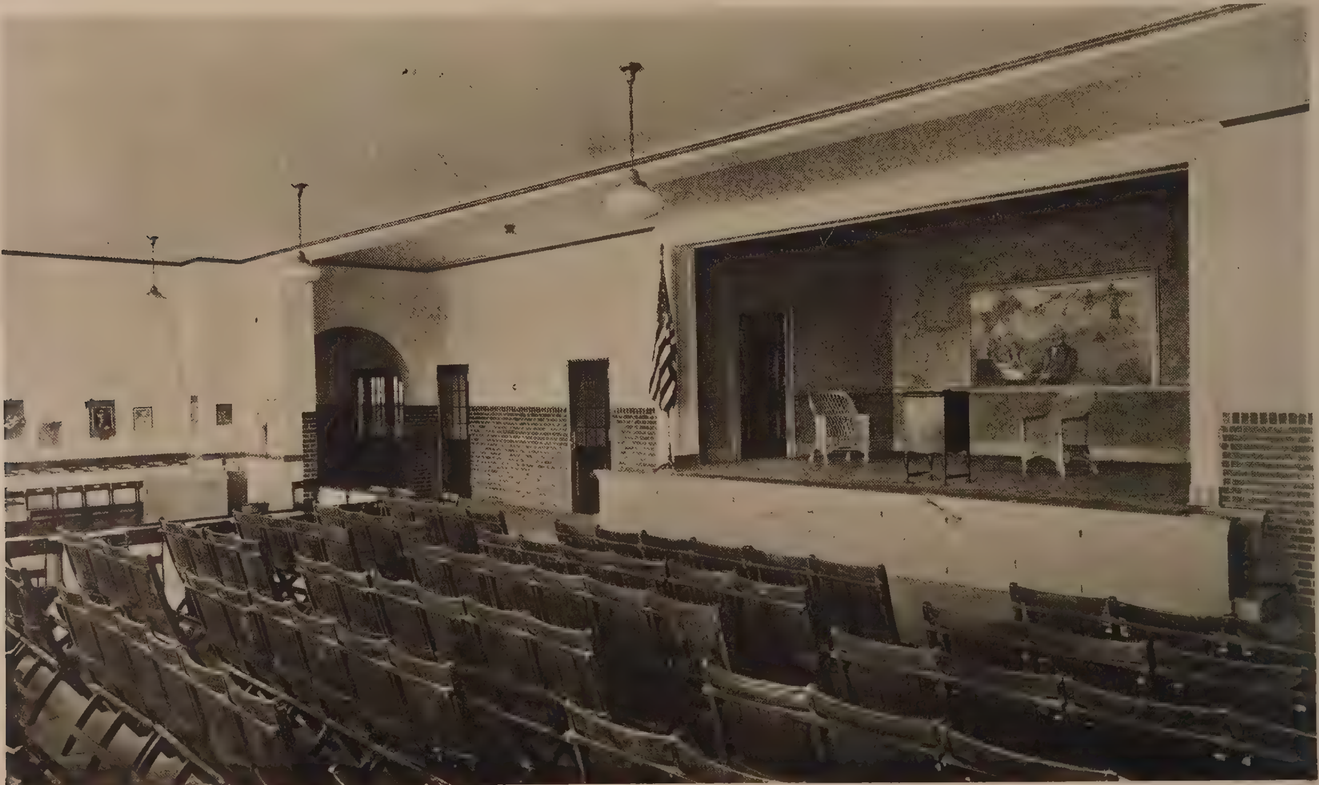
Cram & Ferguson, Architects.



NATHANIEL HAWTHORNE SCHOOL, TEANECK, N. J. (See Plan Plate LVIII). Hacker & Hacker, Architects.

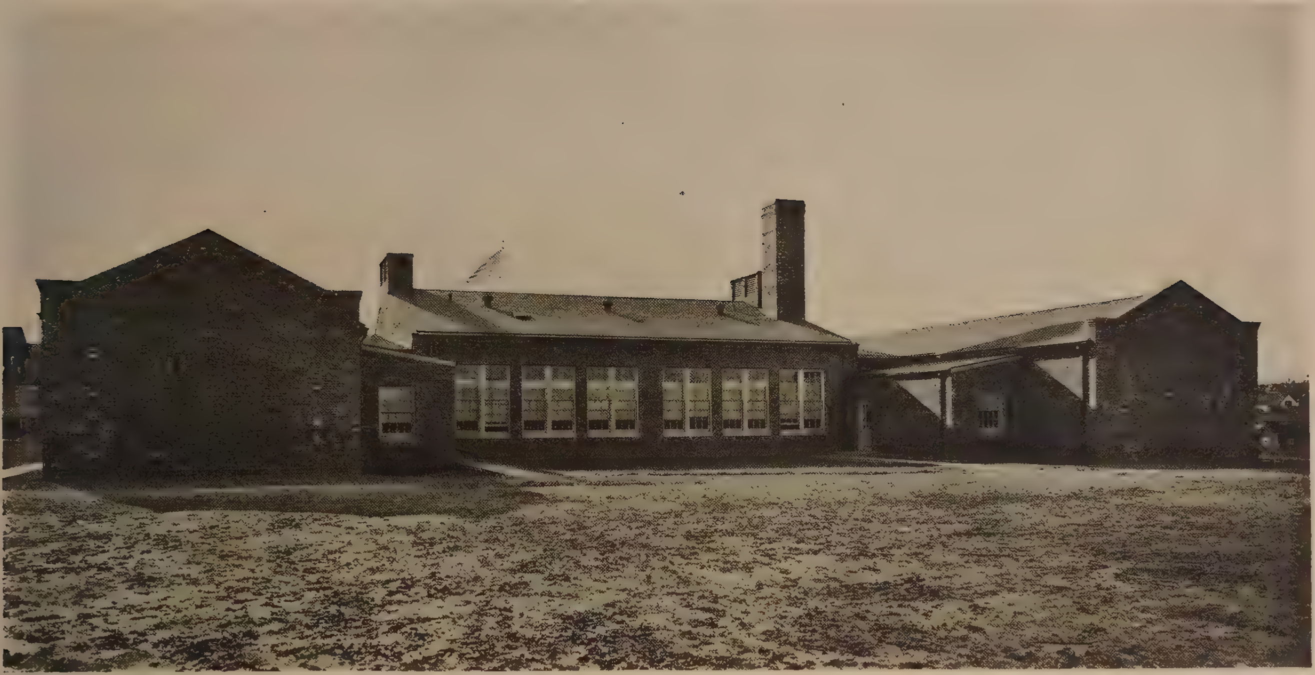


DETAIL.

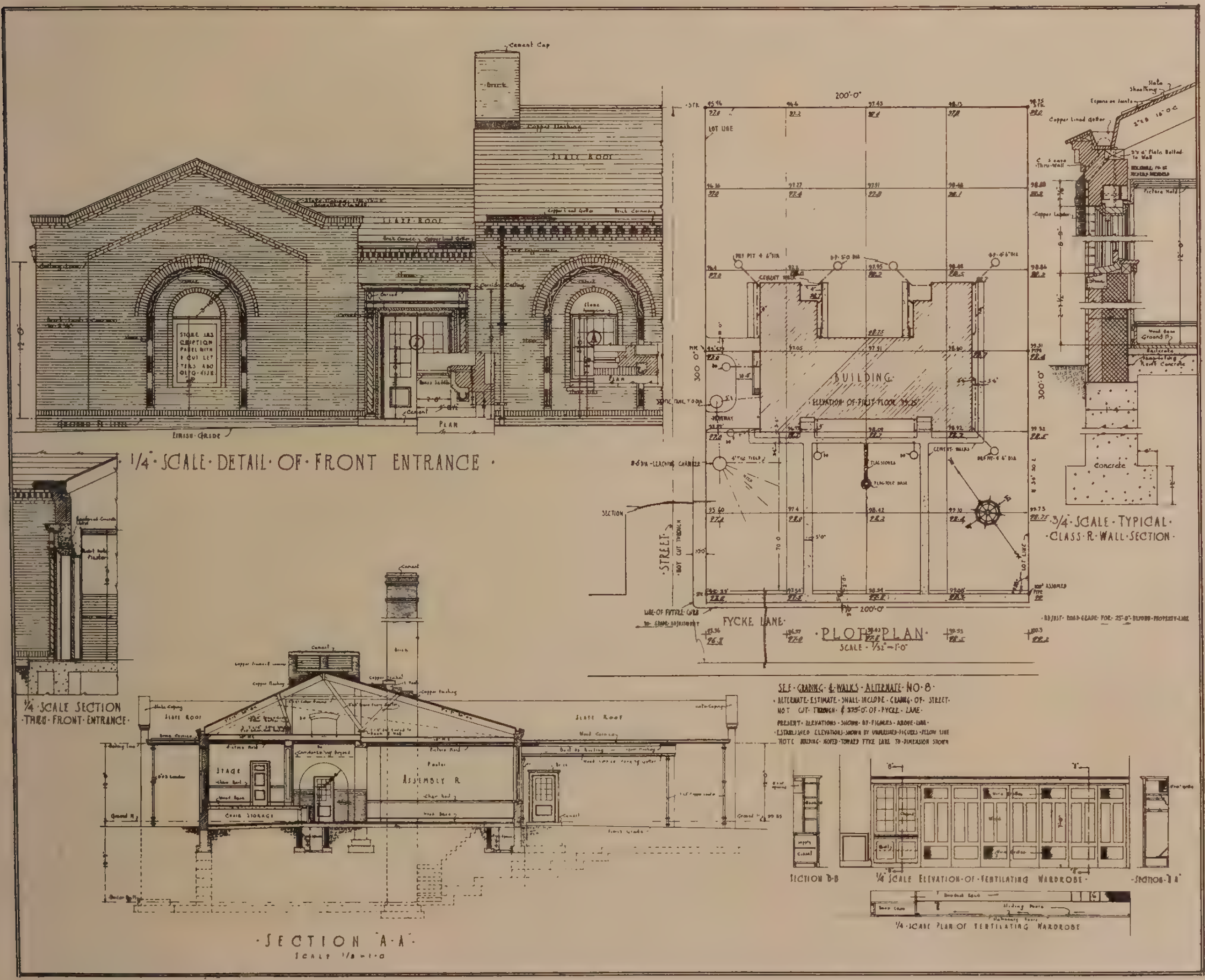


AUDITORIUM. NATHANIEL HAWTHORNE SCHOOL, TEANECK, N. J.

Hacker & Hacker, Architects.

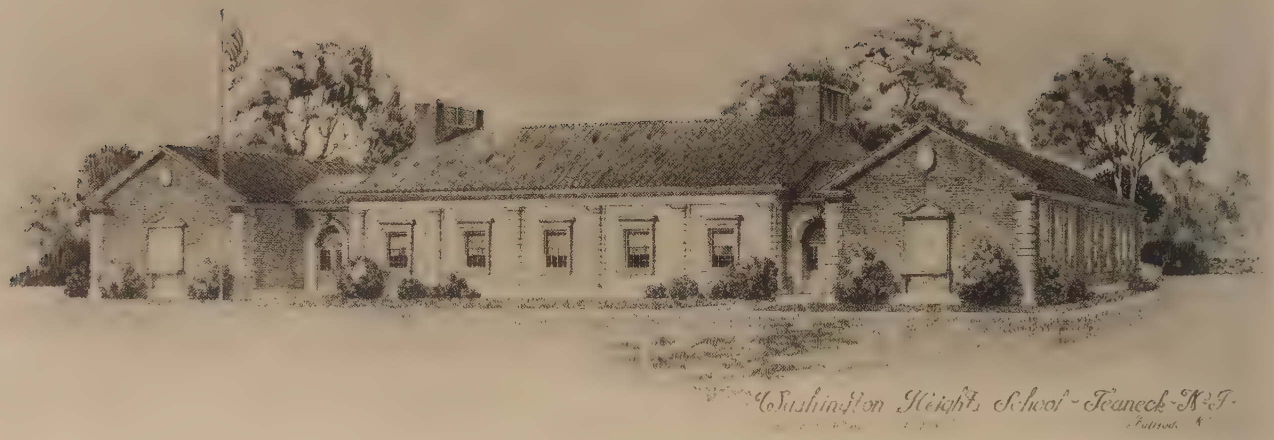


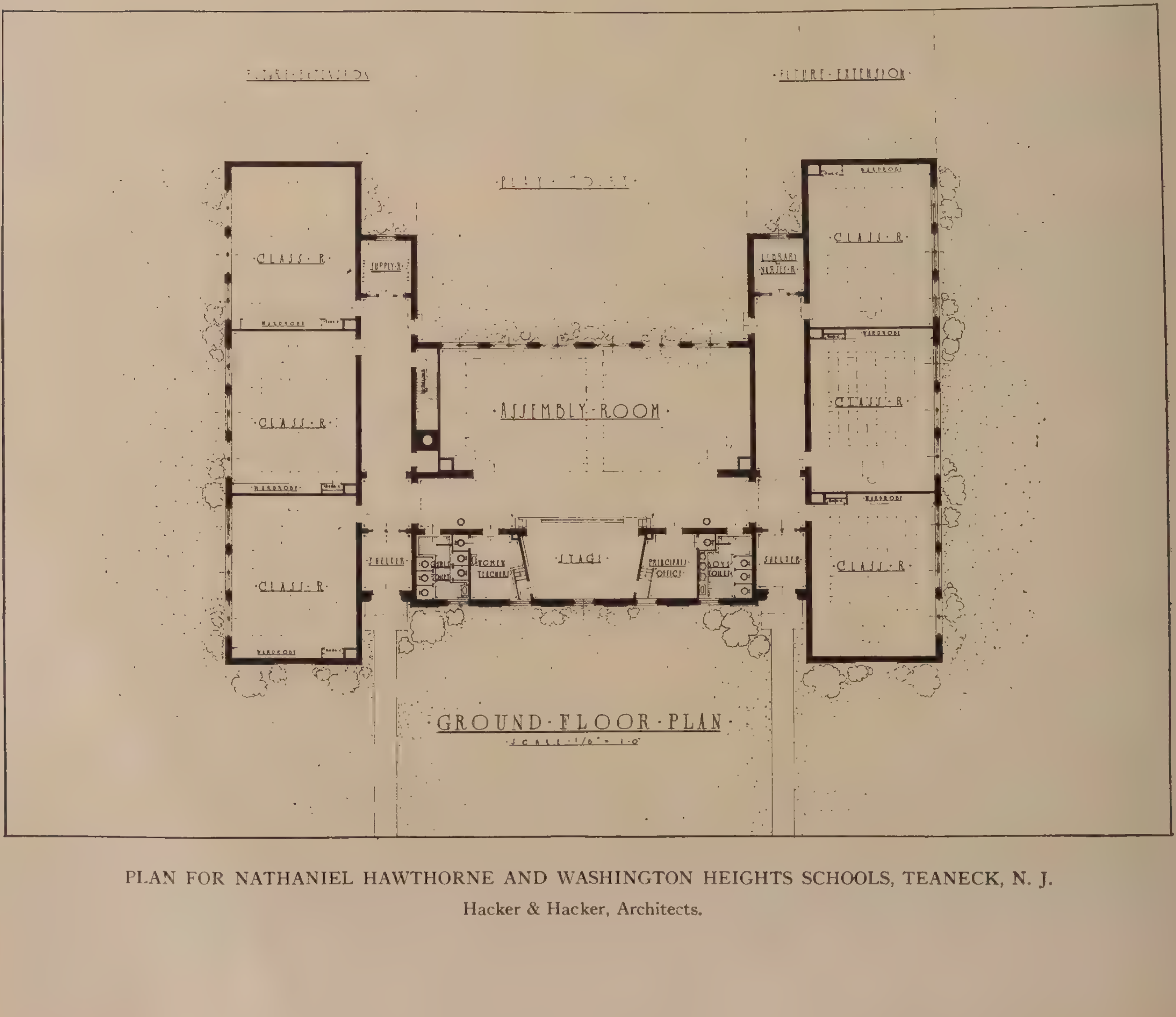
REAR OF BUILDING.



Cement Cap
Brick
Copper Flashing
Slate Roof
Stone Panel with Raised Letters
Plan
Finish Grade
1/4· SCALE· DETAIL· OF· FRONT ENTRANCE·
200'-0"
300'-0"
LOT LINE
BUILDING
ELEVATION OF FIRST FLOOR
STREET
FYCKE LANE
·PLOT· PLAN·
SCALE · 1/32"=1'-0"
SEE · GRADING · & WALKS · ALTERNATE · NO · 8 ·
· ALTERNATE · ESTIMATE · SHALL · INCLUDE · GRADING · OF · STREET · NOT CUT · THROUGH · & 375'-0" · OF · FYCKE · LANE ·
PRESENT · ELEVATIONS · SHOWN · BY · FIGURES · ABOVE · LINE ·
· ESTABLISHED ELEVATIONS · SHOWN BY UNDERLINED · FIGURES · BELOW LINE
NOTE BUILDING · MOVED · TOWARD FYCKE LANE TO · DIMENSION SHOWN
Concrete
3/4· SCALE · TYPICAL· CLASS· R· WALL· SECTION·
1/4 SCALE SECTION THRU· FRONT· ENTRANCE·
Slate Roof
STAGE
ASSEMBLY R
Chair Storage
· SECTION · A-A ·
SCALE 1/8"=1'-0"
SECTION B-B
1/4 SCALE ELEVATION · OF · VENTILATING WARDROBE
· SECTION · A-A ·
1/4 · SCALE PLAN OF VENTILATING WARDROBE

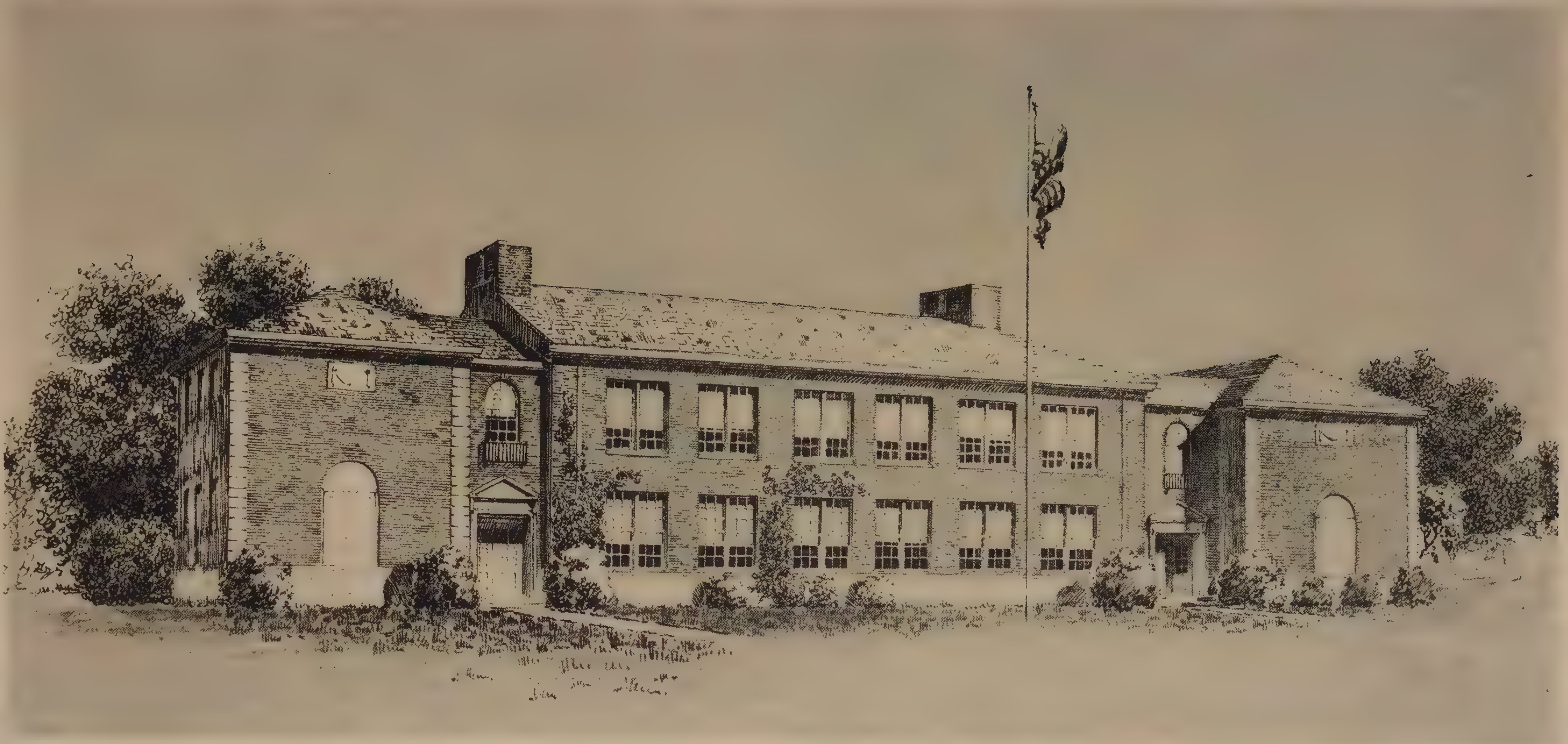
EXTERIOR DETAIL OF FRONT. NATHANIEL HAWTHORNE SCHOOL, TEANECK, N. J. Hacker & Hacker, Architects.

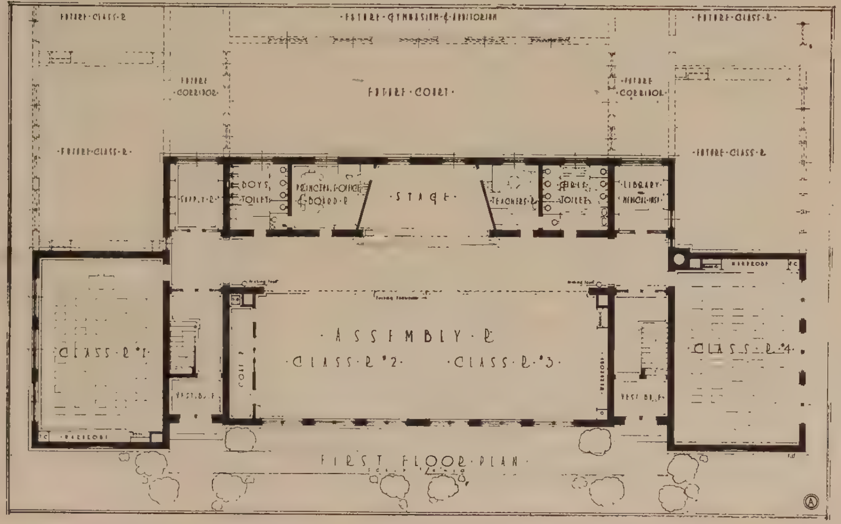

Washington Heights School - Teaneck - N.J.

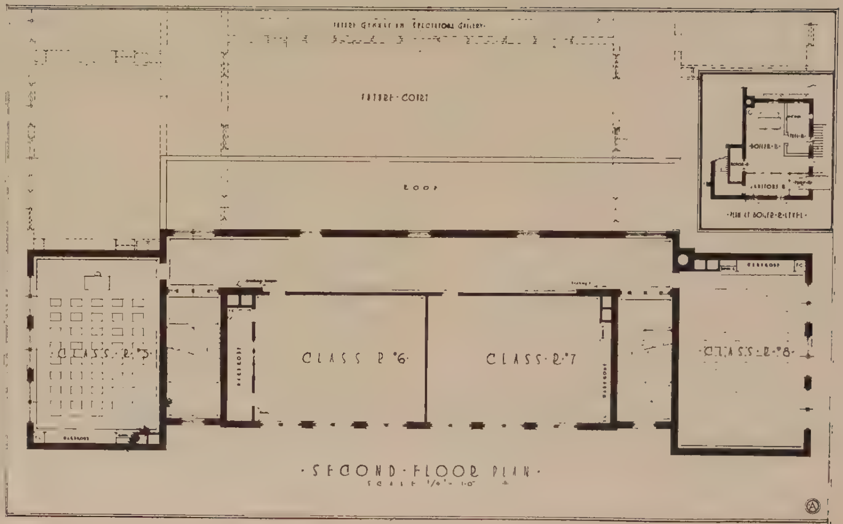


PLAN FOR NATHANIEL HAWTHORNE AND WASHINGTON HEIGHTS SCHOOLS, TEANECK, N. J.

Hacker & Hacker, Architects.

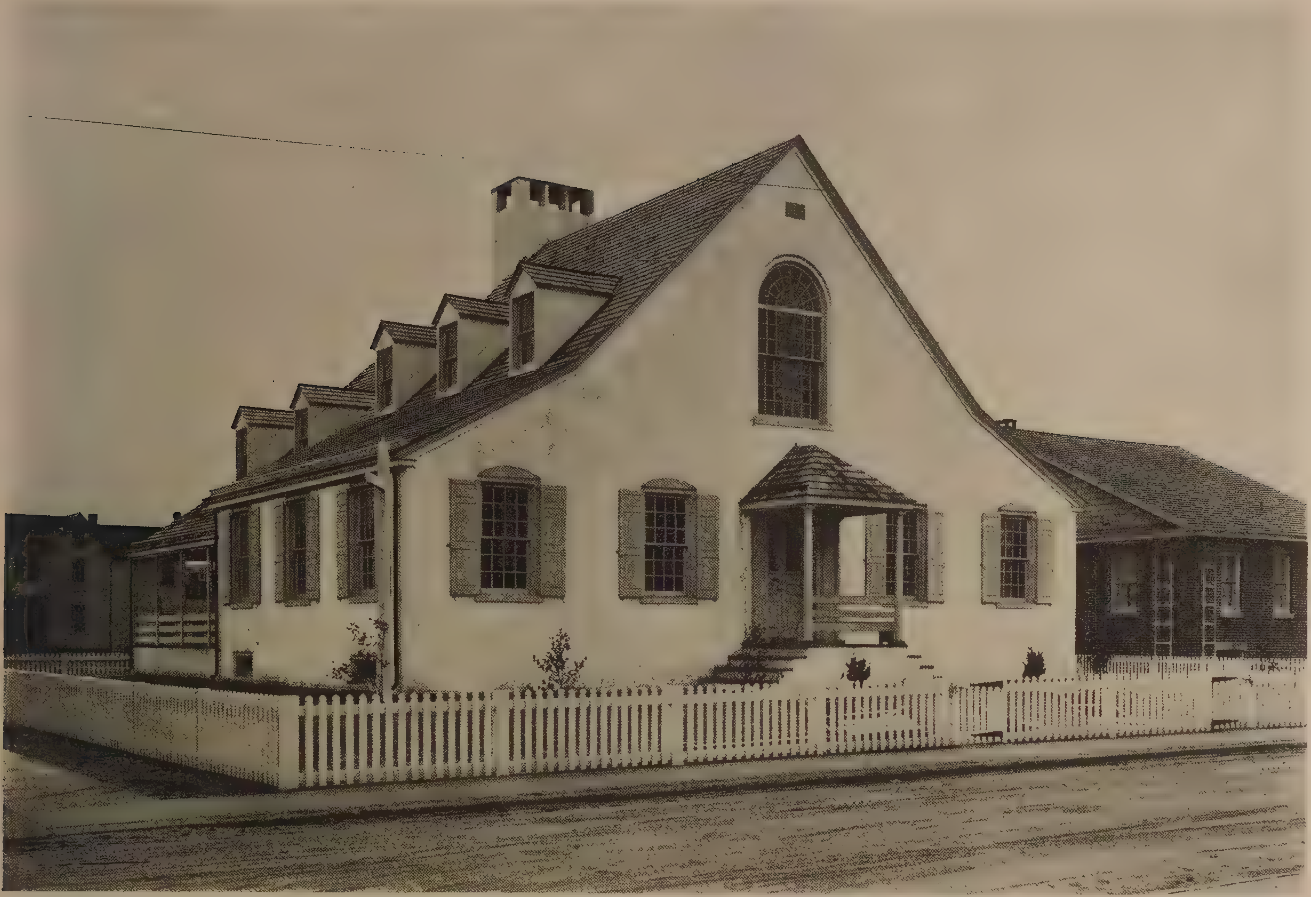


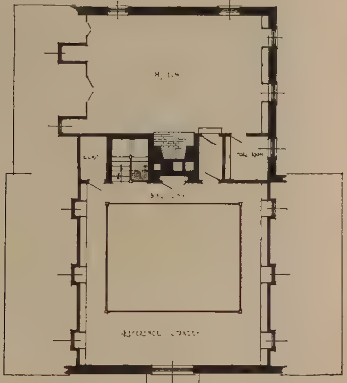




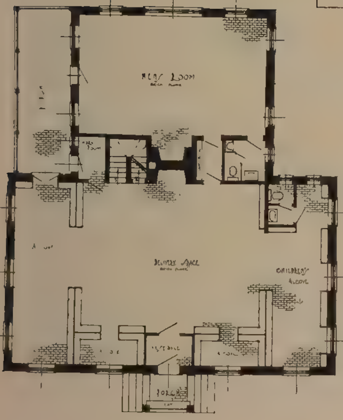
PUBLIC SCHOOL, SADDLE RIVER, N. J.

Hacker & Hacker, Architects.





-SECOND FLOOR PLAN-



-FIRST FLOOR PLAN-

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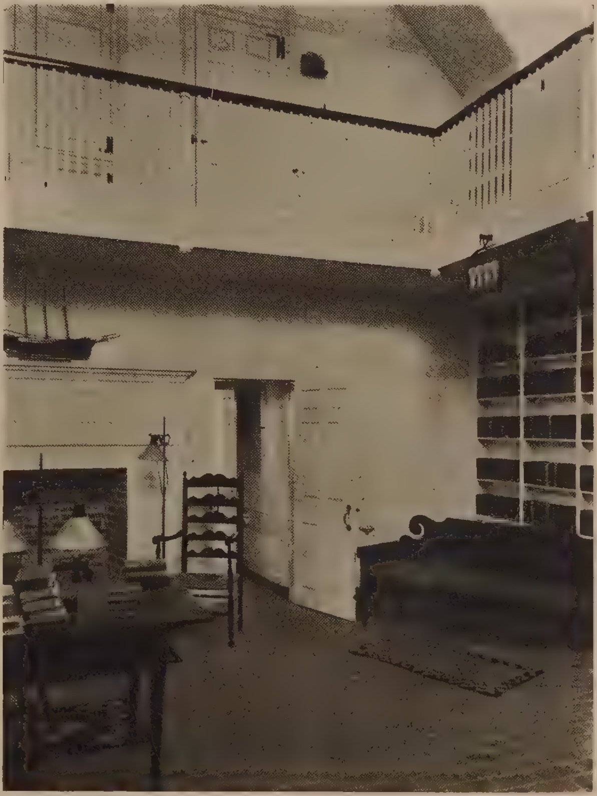
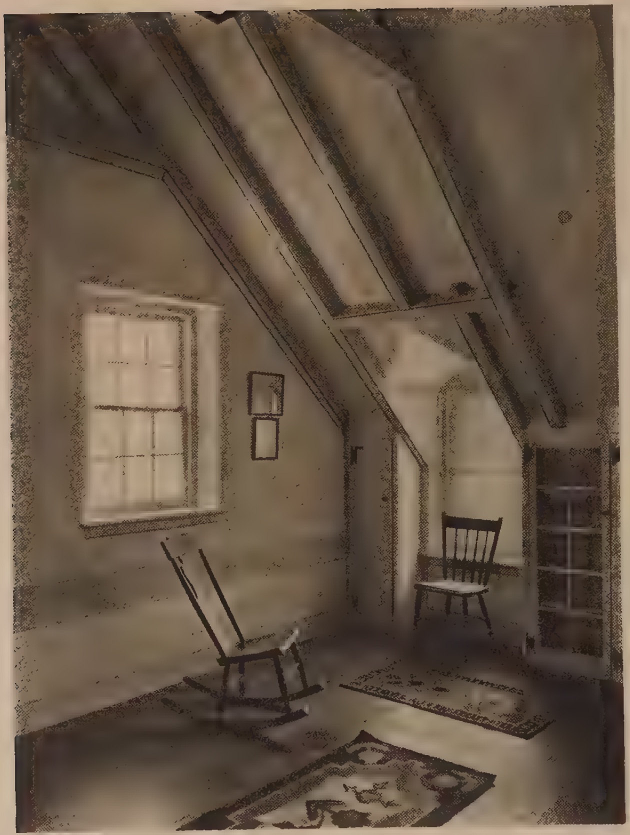
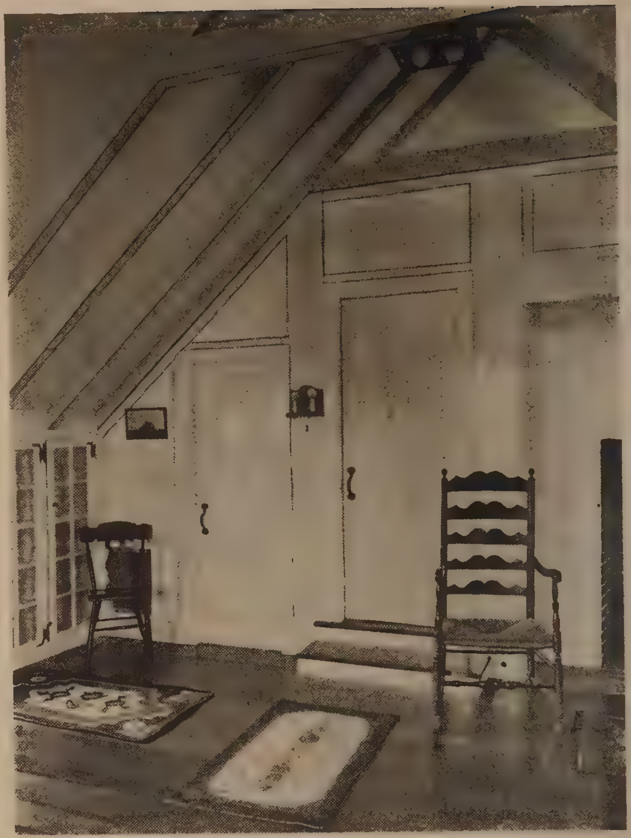
BEACH HAVEN, N. J.
R. Brognard Okie, Architect.



DELIVERY SPACE, FIRST FLOOR.



MUSEUM, SECOND FLOOR.



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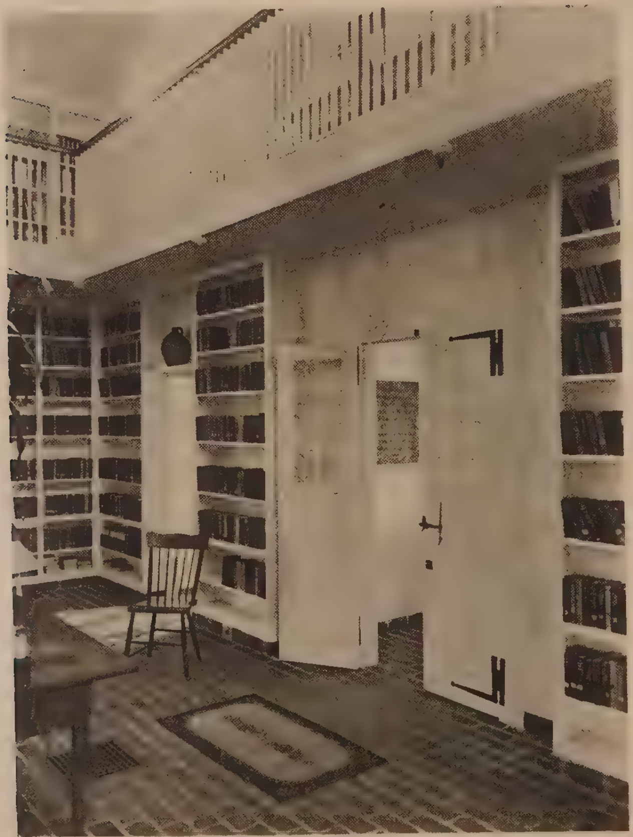
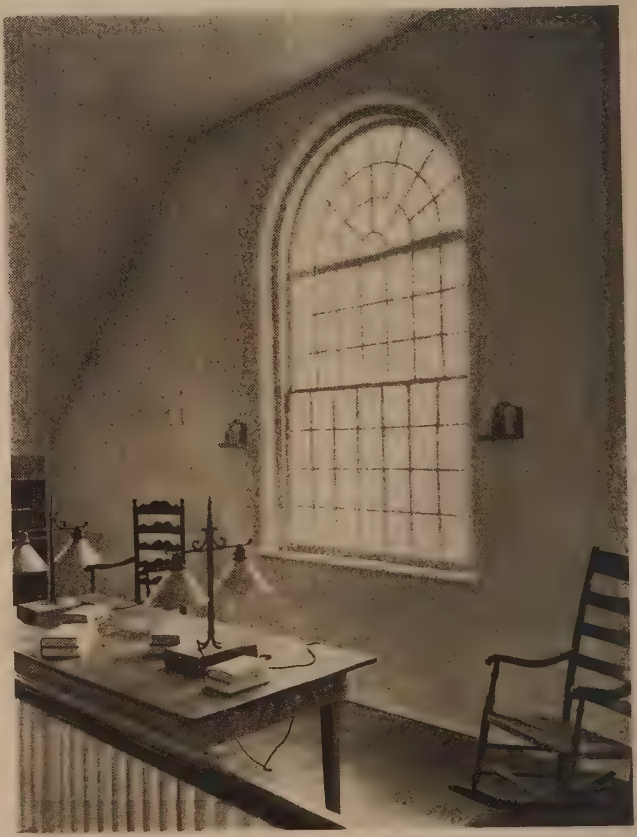


STACKS IN DELIVERY ROOM.



REFERENCE SPACE, SECOND FLOOR.

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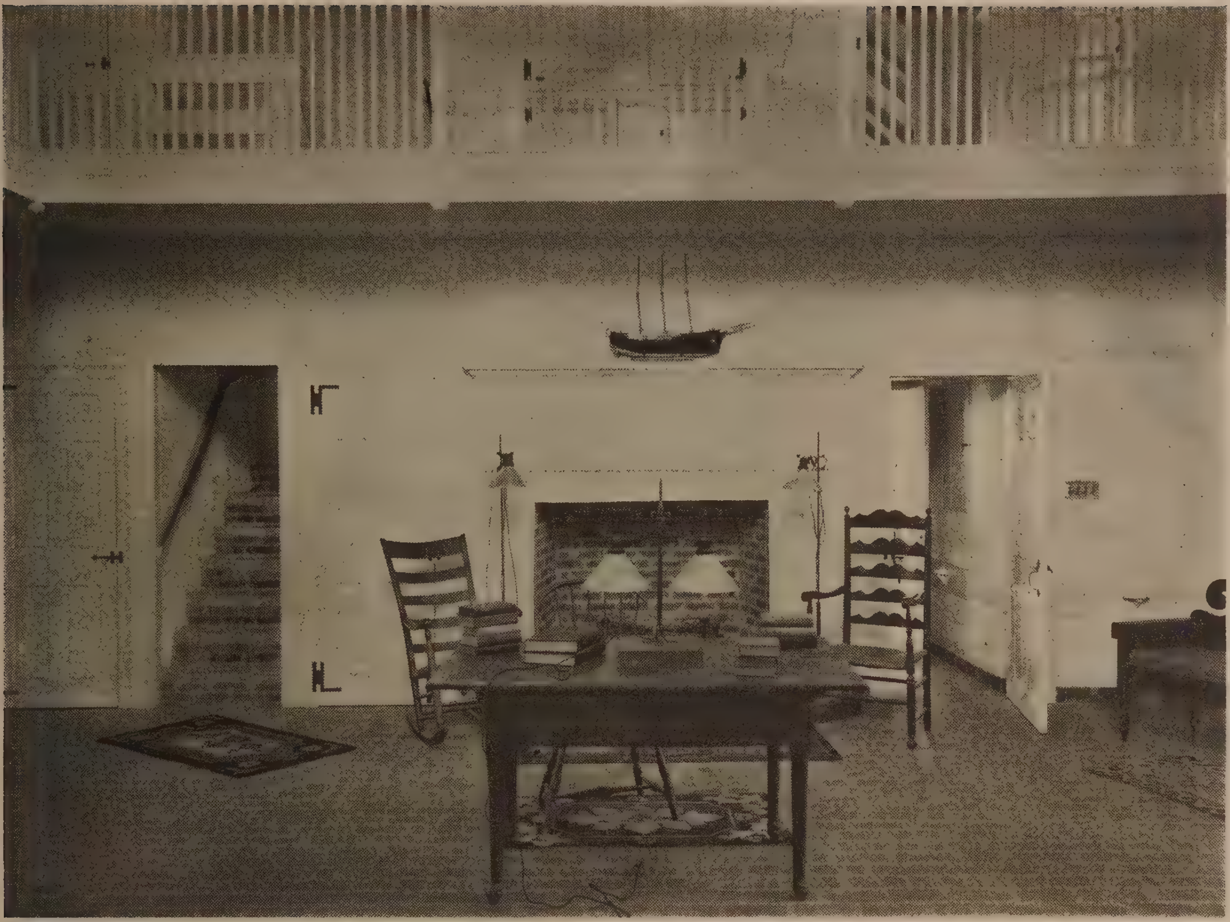
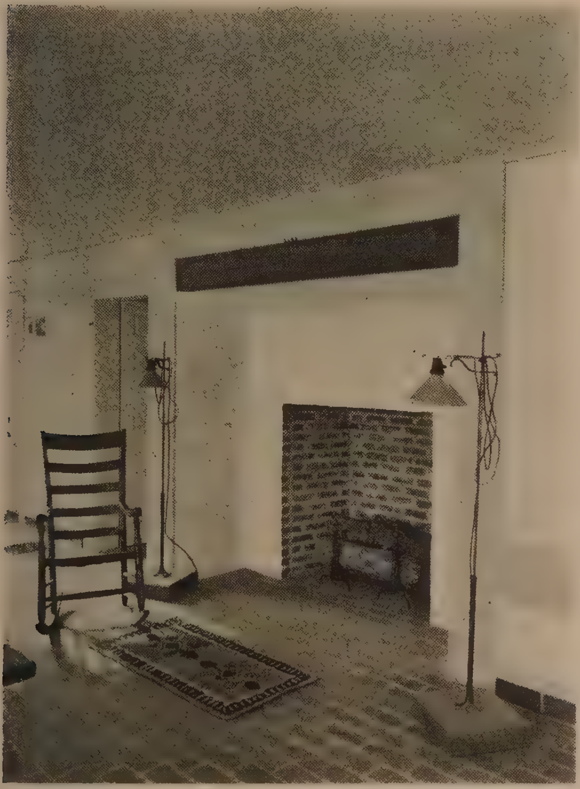
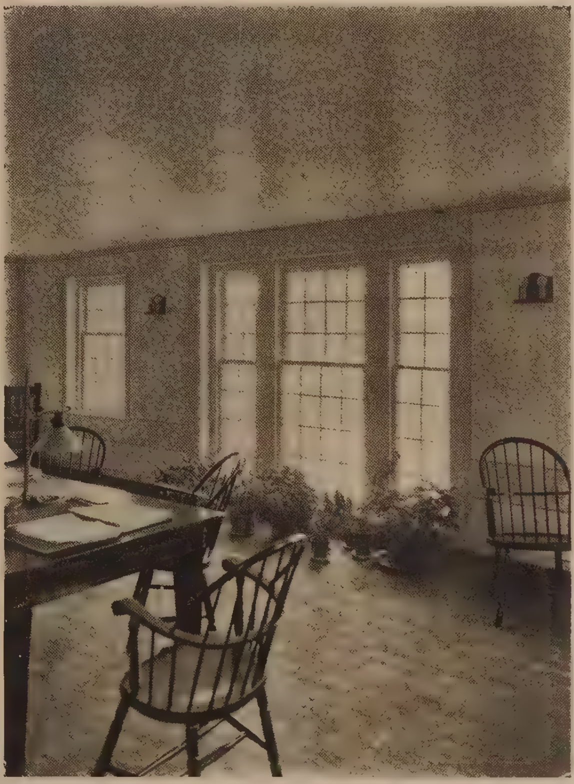
R. Brognard Okie, Architect.



PUBLIC SPACE.



MEN'S ROOM.



MEN'S ROOM.

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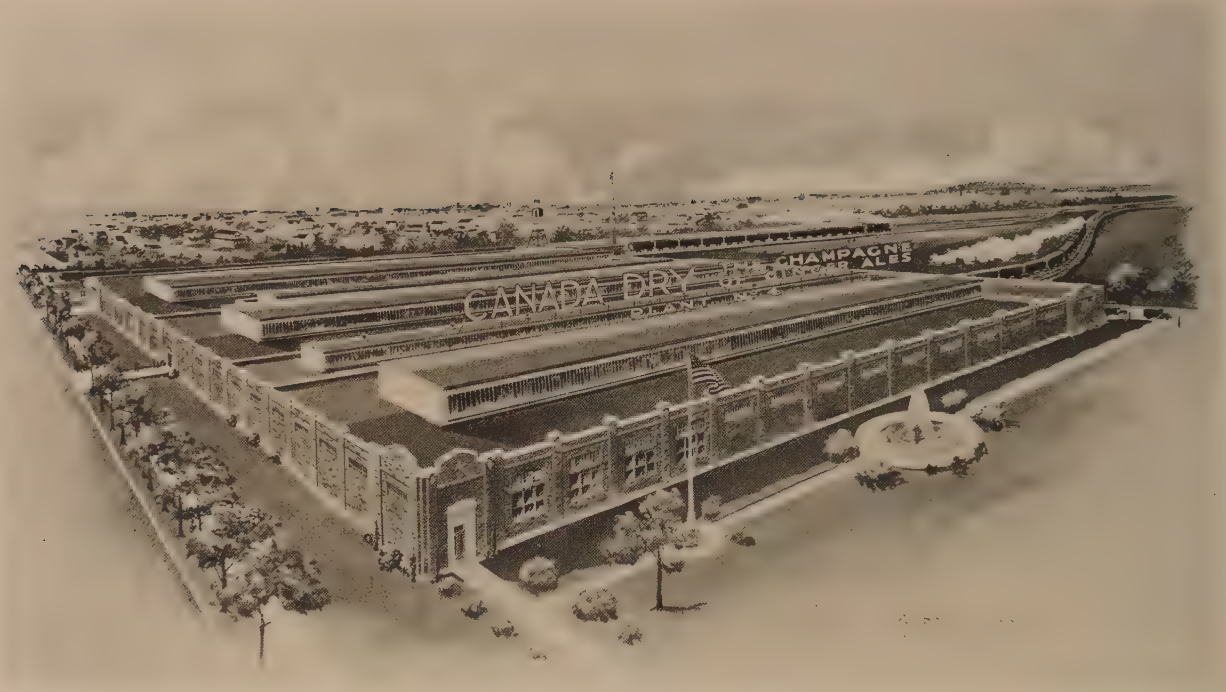
R. Brognard Okie, Architect.



Canada Dry Ginger Ale, Inc.

Russell G. Cory, Architect; Walter M. Cory, Associate.
Mr. A. Epstein, Structural Engineer.

THE conditions to be fulfilled in this plant were all known and carefully worked out tentatively between architect and owner before the location was determined or the site purchased. This condition permitted the operating superintendent to visit each of the possible locations with the required layout before him, and enabled him to study and weigh each important factor as affecting the relative suitability of the several sites.

The more important considerations were the following:

(1) Freedom from nuisance industries such as those giving out soot, dust, fumes, or odors. This would be met by locating in or adjacent to a residence district in a zoned community.
(2) A labor market where people largely owned their own homes and hence would be reliable and permanent.
(3) A plentiful supply of pure water.
(4) Relatively inexpensive land permitting the factory and ample storage space to spread out on a single level, and permitting the enclosing of loading tracks to reduce the risk of bottled goods freezing during transit.
(5) Good roads and short truck haul to large local market.
(6) Accessibility to trunk-line railroads.

With a well-digested chart of the requirements that must be met to maintain the given output successfully and continuously and with the desired plant layout available for study, the selection of a site was easily and intelligently accomplished. Many attractive sites were quickly discarded because they failed to meet one or more of the major conditions.

The search for the desired location ended in Maywood, a suburb of Chicago, where each requirement was adequately met.

Property was purchased and construction plans started at once from a production layout of the plant based on an output of 300,000 to 350,000 bottles of the product per day, and the actual physical conditions of the land and surroundings.

It had to be borne in mind that the function of the buildings and other structures to be designed was not only to permit the above output of commodity under normal conditions, but to guarantee uninterrupted production during adverse conditions causing interruption of flow of raw materials into the plant, or causing interruption of processes or maintenance.

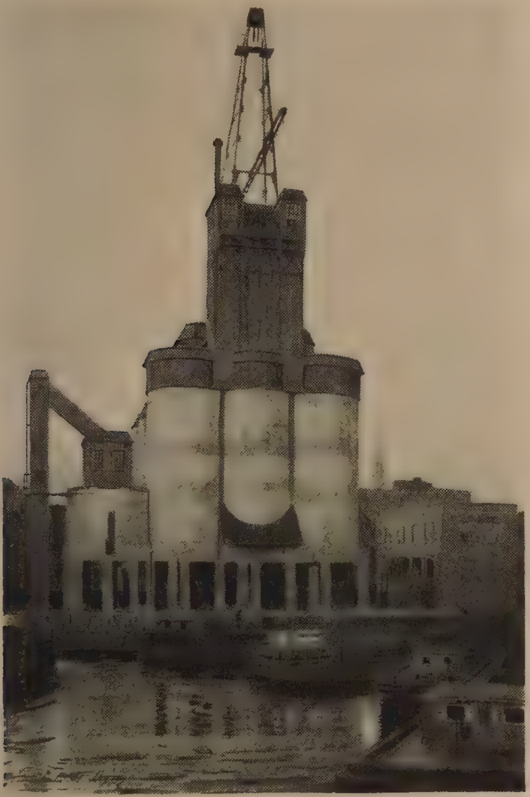
Considerations of this nature led to the placing of the shipping tracks entirely within the factory, permitting the refrigerator-cars to warm up before being sealed and despatched; the furnishing of sufficient space for a 15-day reserve supply of bottles and a 30-day reserve supply of raw materials and finished product on the floor.

It will be realized that these and other facilities not called for in a first-hand analysis of daily production pay handsome dividends on their first cost when in time of emergency it is realized, as at no other time, that the business of a factory is to ship goods continuously.

Three Solutions of an Interesting Problem—Expeditious Handling of Coal

By Charles H. Higgins

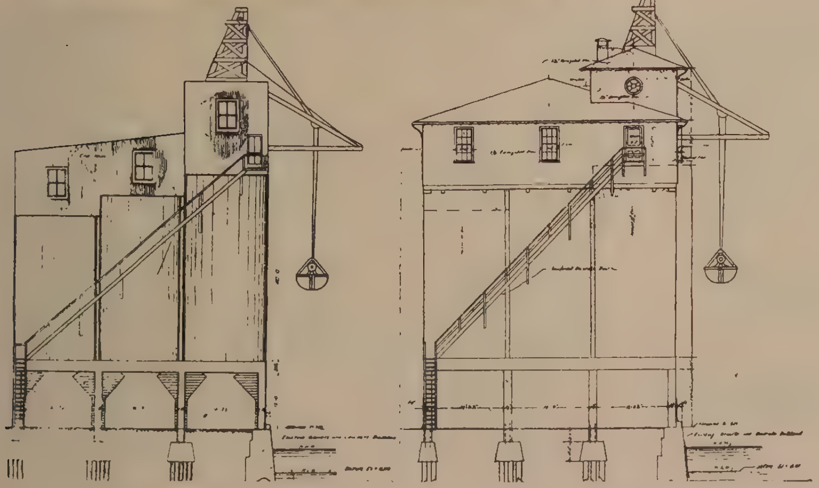
WHEN a need arises which requires a special building there are always three avenues of approach, or rather two avenues and a compromise road through the space between. The first approach is through thinking of the elements and bringing them together. The second approach is through thinking of the whole, the elements coming in only as necessary parts. Approaching by the first avenue, the whole is seen only at the completion and is meaningless and confused; the elements alone having meaning as they alone have unity. By the second avenue of approach, the whole is seen as a unit, the elements existing only as parts.

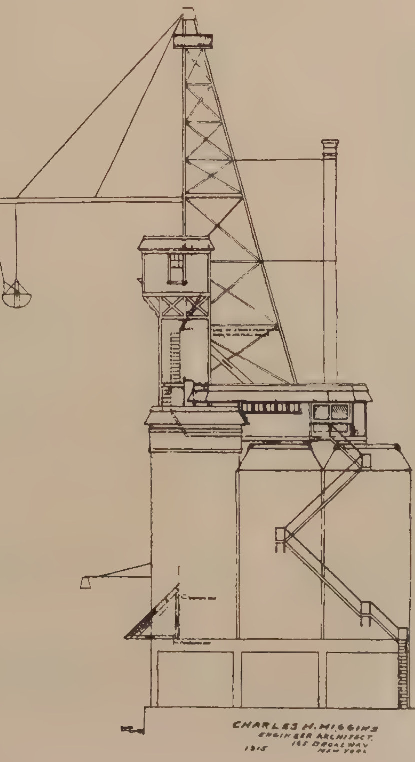


The avenue we have named Elements and the avenue we have named Unity are so wide apart, that there is room for a third road between, a road not straight, always changing direction, sometimes inclined toward the avenue called Elements, again toward the avenue called Unity. This road is Compromise. By this road an outward appearance of unity is sought by providing a shell so ample that the confusion between the elements is outwardly concealed. The elements and their functions being at the same time shrouded, an appearance of unity results, the confusion being concealed.

We illustrate with studies by three different minds approaching the same need by these three ways:

The example is chosen to illustrate because it serves a simple and yet a very common need; but more than all, because it is rare to have drawings representing studies of the same thing made by three minds following each of three ways. A great deal of coal is needed on Manhattan Island to which it is daily floated. This coal must be dug from the canal-boats, stored temporarily, screened, weighed, and trucked to keep the city going. The structure built to fill this need is called a Riverside Coal-Pocket, and the one illustrated may be seen at the foot of East 19th Street, Manhattan. A simple process—yes; that is why it is selected to illustrate. Not fully developed, even in the third illustration—a further reason for selection to illustrate the point. The superstructure of the third design referred to as representing Unity appears more expensive, but is not when we consider the fact that two men can handle as much coal in eight hours as would require, in either of the other designs, three men for twenty-four hours; that is, three shifts of eight hours each.





The Effect of Gravity on Building Construction

By H. Vandervoort Walsh

Professor of Construction, School of Architecture, Columbia University

Article VII

THE BALANCING OF FORCES CREATES FORMS IN NATURE

THE more scientists investigate the structure of natural forms, the more evidence they accumulate that no form is the result of accident but is the result of the balancing of internal forces. When we observe the larger phases of the force of gravity, and compare them with the attractive forces which exist between atoms, we begin to realize that we cannot make any sharp distinction as to where the force of gravity begins and the internal force that builds up natural forms ends. Here is the earth, shaped as it is, because of the resulting balance of attractive forces, and it travels in a path around the sun with other planets, because the sun attracts it, and yet at the same time its motion, hurling it out and away, creates a balance with this attractive force. Its path is positive and certain and results from the exact action and reaction of forces.

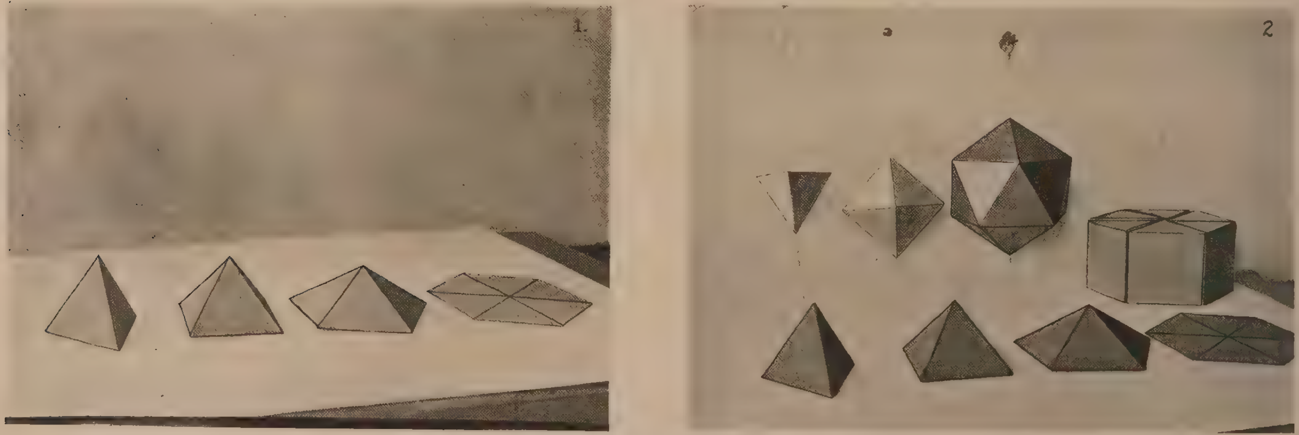
THE LEAF FACTORY - USEFULL & BEAUTIFUL

Now our modern observations concerning the structure of the atom tell us a similar story. The atom is built up of electrons. A positive electron is in the centre and negative ones revolve about it. The positive electron in the middle is called the nucleus and it attracts the negative electrons that move about it, and yet these electrons do not close in upon the centre one, but their motion keeps them away. An atom is a balanced structure of a positive electron neutralizing the negative electrons that are around it. The atoms of different substances which appear in nature are made up of different numbers of electrons. For example, a carbon atom is one that can retain in its structure, in a balanced condition, six electrons. An atom built with seven is nitrogen and one built with eight is oxygen. The chemist tells us that all arrangements of numbers of electrons up to 92 are found in nature with few exceptions, and he predicts that some day these exceptions will be found. The various electrons, pulled by attractive forces, group together in geometric shapes, and as a result the atoms have definite forms.

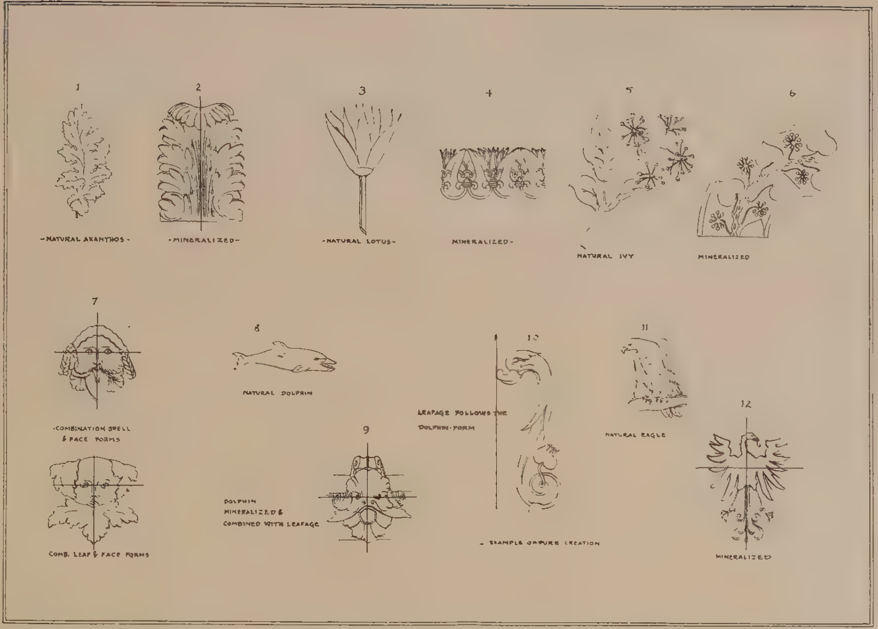
These small forms that we call atoms attract one another and will lock themselves together like a riveted framework to build up crystals. We know this to be true, for in the last twenty-five years the X-ray has permitted scientists to examine the form and structure of atoms and molecules. Previous to that time no knowledge of the subject was possible, since the most powerful microscope could not detect these atoms that we now know to be as small as a hundred-millionth of an inch in diameter.

It is difficult to imagine this extremely small building-block of nature to be composed of rapidly moving electrons, and it is also difficult to think of substances like stone and iron to be built up of atoms that are in constant motion, quivering and shivering, like captive birds that long for flight. The atoms are constantly struggling between this desire to escape and the attractive force that pulls all of them together. Sometimes the attractive force becomes so strong that the atoms are made to come together to form a hard substance like diamond, other times the attractive force is not as powerful in comparison to the repellent, and they build up a substance like butter, and then there are some atoms that never are attracted together, like those which make the gas argon, and so do not seem to enter into the building of natural forms.

We find, though, that heat is the agency which increases the repellent action over the attractive force. For example, let the heat energy come from the sun to the earth and the atoms of water which build the iceberg can escape to the sky. The first sign of their newer freedom is the melting of the ice to liquid. In this condition the atoms are further apart, because of the increase of the repellent force, and they can



Geometric crystalline solids, which reflect the simple, internal structure of some of the common minerals. These forms suggest to the mind durability, since they are the ultimate forms that matter will take. The great pyramids reflect this quality.



Forms of plants and animals suggest something to the mind that is perishable. Crystal forms suggest durability. Natural forms may be changed to the regular geometric symmetry of crystal forms so that they suggest durability. We call this process conventionalization. It would be better to call it mineralization.

roll by and over each other more easily. In this partially unbuildable condition, the greater attraction of the earth which we call gravity makes them flow out into level planes and cease to form a mass that is capable of standing up alone. But if more heat is added from the sun to the water, it changes into vapor or gas, since the motion of the atoms is increased so much that the repellent action between them is far greater than the attractive force. Indeed, they desire to spread away from each other to such an extent that they will beat against the walls of any chamber in which they are confined. Witness the pressure of steam within a boiler, as an example of this.

But let the sun withdraw its face, and the cold chill of the north abstract the heat from the clouds, and all the million dancing, water-vapor atoms will have to rush together into snowflakes, and drop back to the earth in things of beauty, enslaved to force. We can imagine two molecules of water in the upper air becoming associated and then reaching out with open hands to gather in more molecules which lock themselves in regular position about the original two, until, by the time they have fallen to the ground, they have created the marvellous form of the snowflake. In the beginning, this flake took shape by growing six arms out from the centre, then upon these arms grew branches at an angle of 60 degrees, and then upon these branches grew out at 60 degrees other branches, and so on until an intricate structure of lacelike pattern was created. This fundamental geometric backbone is alike in all snowflakes, and yet the various patterns that result from this structure are said to be so varied that not one ever repeats another in detail.

All substances will form crystals, if they are given the freedom to do so, but there are certain conditions necessary to their growth and one of these is that they must start with a nucleus or centre. It is not possible to say why, in a cooling liquid, two or three molecules join together and start the nucleus of a crystal. There may be some small particle of foreign substance present about which the molecules gather. Anyway, there must be a beginning, a centre for the structure. If there are many nuclei present, then many crystals will form, and as they are not likely to have all of their axes oriented in the same direction, they will grow in this and that way, meeting at their outer edges to form a substance that is a mass of little crystals, packed together in all directions. But if one nucleus is created, a large crystal can be made to grow upon it that is very regular in form. For example, in the laboratory, for purposes of study, a large salt crystal can be grown by suspending a minute, but perfectly formed, crystal in a solution of salt that is kept at the proper temperature and in motion.

The study of crystals reveals an interesting system of construction, which could be profitably studied by the architect, for this basic structure extends into all things of nature and explains many of their proportions and shapes. Luther Burbank, the great plant wizard, who has changed the very nature of flowers and vegetables by his patient crossing and recrossing of various species, refers to this universal law of structure in the following words.

"Just where the mineral substance becomes converted into animal life it is not easy to say, but I am convinced that an unbroken chain exists in nature from its most elementary forms to its most highly developed agency. Save in a few instances, plants differ from crystals in the fact that they require the direct action of the sun for life.

"The crystal, true, is a very elementary thing; it is a single-track affair; yet it reacts to its environments in ways easily foreseen. If the environment offers no nourishment or stimulus, the crystal hibernates, like certain animals. But put a salt crystal, as an experiment, in a salt solution, and it will feed and grow. Cross it with certain other crystals and new types will result."

In order to express to the reader how the basic structure of the crystal is built up, since we must talk upon flat paper and not actually in the round, we will begin our observations upon the flat surface of a tub of water. On the surface of the liquid are floating three corks, into which have been stuck in a vertical position small bar magnets. The same poles of the magnets are all the same way up, and so they repel each other, and the little corks float to the edge of the tub to get as far from each other as possible. If now, however, an electromagnet is placed beneath the centre of the tub, the powerful attraction of this magnet will draw all of the balls toward the centre, but, as they approach each other, their own repelling action becomes more and more evident until a point is reached where they come no closer together, for the repelling force balances the attractive. In this position they form an equilateral triangle, just as we might imagine they would, when the attraction and the repelling action between each unit are balanced and equal.

This experiment does not prove anything about how the atoms would arrange themselves in building up a substance, for the forces are much more complicated and the structure, instead of being in two dimensions, is in three. However, it does suggest something to us that will help us visualize what we know is the arrangement of the atoms in the substance we call matter.

By carrying our imagination into three dimensions, instead of thinking of three bodies, we would have to think of four which equally attract and repel each other. This fourth body will have to take up a position equally distant from each of the other three. There is such a position, and it can be described by considering a cube. On the top face of the cube two of the bodies will lie at opposite corners diagonally across from each other. Now the other two bodies will lie on the diagonal of the lower face of the cube, which is at right angles to the diagonal of the top face. In these positions on four corners of a cube, the bodies will be equally distant from each other. If we join them, they make a solid that is bounded by four equilateral triangles, a body that is called a tetrahedron.

We may imagine these bodies in another way. Think of them as the centre of four solid balls. Lay three balls on the table, making a triangle. On top of them lay the fourth ball. Now the centres of the balls are equally distant from each other.

Now modern investigation with the X-ray shows that the atoms and molecules do arrange themselves in this way. There are many variations, of course, but the basic structure is this tetrahedron. The structure of the crystals of gold, copper, aluminum, and silver is a repetition of this basic structural form. We can see it in many other substances like the salt crystal, the diamond, zinc blende, and Iceland spar.

If a crystal is cleaved, it will give along the planes in which the atoms are arranged, and the outward form that comes from such cleavage is evidence of the internal structure of the atoms. We used to suspect this to be true but now we know it.

Here is a very positive lesson in design for the architect. The beauty of the crystal shape depends upon its reflection of the invisible laws of its structure. This is what Goethe said by intuition and not knowledge, "The beautiful is the manifestation of the secret laws of Nature." The basic law of good structural design is that the outward form must express the invisible structural arrangement of the interior. We cannot evade this conclusion, for the very world in which we live teaches us this truth in spite of ourselves. We know it instinctively.

Another lesson we can learn is this, that if a framework is built to imitate this tetrahedron, it will be found to be the most rigid structure that can possibly be conceived. Indeed, any framed building that does not make use of this stiffening unit is not rigid, but is weak and will collapse. Our framed towers, bridges, tall buildings, and trussed roofs must introduce this basic form into their make-up, or else the winds from the north will blow them flat to the ground.

Now mankind for thousands of years has recognized the structural qualities of metals. He has been unable to use them in buildings until recent years, because they cost so much energy to produce. Now, however, nearly every building has some structural steel within its vitals, and our largest buildings depend almost entirely upon their structural-steel framework to stand up.

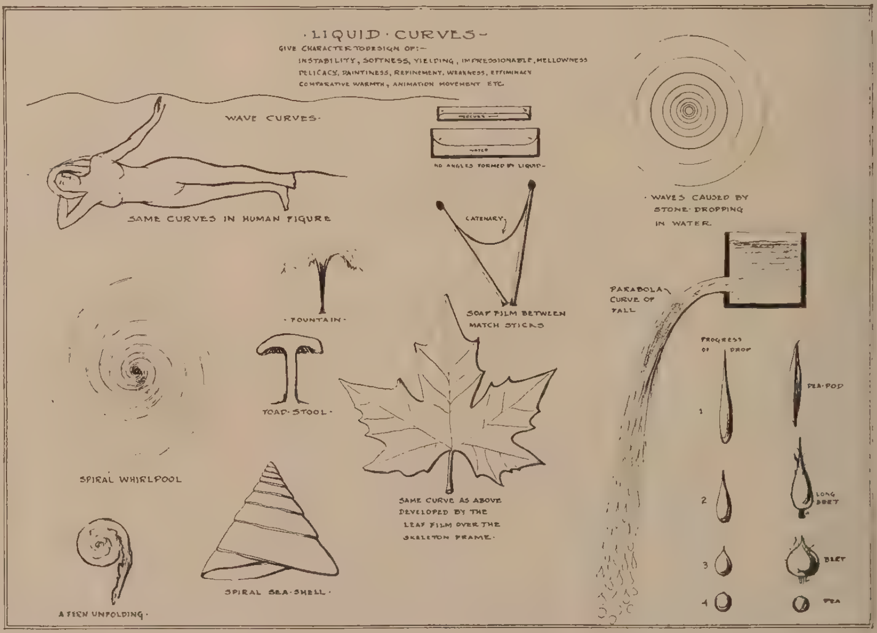
Metals consist of many small crystals pressed together into one mass. We can imagine that these crystals group themselves together something the way a tray full of shot will arrange itself, when the tray is tilted and the shots run together. They group themselves into many orderly units, but the units are not necessarily related to each other. It is possible by shaking the tray to unify more of the shots into larger areas, and so it is possible to treat metals with heat and hammering until the molecules build up few and large crystals. In this condition they can be tested.

For example, bars of aluminum can be so treated, and then put into a machine which will pull them apart, and observations can be made as to how the structure breaks down. They usually stretch under the pull, then begin to get thin at one place, a waist develops, and then finally the break occurs diagonally across the bar. Sometimes the metal will begin to part on both sides of the bar and break inward, the final separation occurring at a point where one big crystal is located. Indeed, it has been found that the way the bar breaks depends upon the way the crystals in it are arranged.

When a single crystal is pulled apart, it shows a very unexpected way of failing. We say unexpected, yet if we think about its structure it is not so astonishing. A crystal placed in a machine that stretches shows it to yield by slipping along a plane at right angles to the pulling force. This plane is one of those between the layers of molecules. This action can be imitated, if a number of layers of glass are stuck together with grease. When they are pulled apart they first must slide apart.

This is not so difficult to understand, if we imagine the atoms to be like balls piled in layers like cannon-balls, and we think of one layer being separated by the pulling force. First the force separates one layer from the other by overcoming some of the attractive force between the molecules. This unseats the balls from the socket they were in between the balls of the lower layer, and in this position they can slide off to one side. A plane of weakness is thus created and the crystal fails at this point by slipping. This is called the slip plane.

If a metal is composed of many small crystals, the weakness of one crystal is somewhat counterbalanced by the slipping resistance of another. The crystals act like two people slipping on the ice toward each other. As they collide, their very action of slipping may cause them to recover themselves


·LIQUID·CURVES·
GIVE CHARACTER TO DESIGN OF:—
INSTABILITY, SOFTNESS, YIELDING, IMPRESSIONABLE, MELLOWNESS
DELICACY, DAINTINESS, REFINEMENT, WEAKNESS, EFFIMINACY
COMPARATIVE WARMTH, ANIMATION MOVEMENT ETC.
WAVE CURVES·
SAME CURVES IN HUMAN FIGURE
MERCURY
WATER
NO ANGLES FORMED BY LIQUID·
·WAVES CAUSED BY STONE·DROPPING IN WATER.
CATENARY
SOAP FILM BETWEEN MATCH STICKS
·FOUNTAIN·
TOAD·STOOL·
PARABOLA CURVE OF FALL
PROGRESS OF DROP
1
2
3
4
PEA·POD
LONG BEET
BEET
PEA
SPIRAL WHIRLPOOL
SAME CURVE AS ABOVE DEVELOPED BY THE LEAF FILM OVER THE SKELETON FRAME·
A FERN UNFOLDING·
SPIRAL SEA·SHELL·

and not slip at all. As they bump, they bounce back into place again. It can be seen from this that metals that are built up of very fine crystals will be stronger than those built up of few and large crystals, and that is the case.

Steel is the metal which we use most in building construction and the manufacturers purposely prepare it so that it will have a fine grain of crystals. However, steel is stronger than iron because it is composed of iron crystals and some carbon crystals. The carbon crystals fit in between the iron crystals and keep the iron crystals from slipping so easily. But if there are too many carbon crystals present, they may weaken the structure by crowding the iron crystals. Cast-iron is just such a material. It is treacherous in tension, for its structure is weakened by too many carbon crystals. On the other hand, when there are more carbon crystals than the iron can absorb, a new crystal is often formed, the molecules of which contain three atoms of iron and one of carbon. This crystal is known as cementite, and its shape is long like a needle. Its presence in the iron makes it hard and difficult to work. The strength of the famous swords of Damascus was due to the proper handling and treatment of iron containing these cementite crystals.

Announcements

John Hocke, architect, announces the removal of his office from 7602 Chappel Avenue to Suites 4 and 5 in the Harbor Bank Building, 1604 East 79th Street, northeast corner of Stony Island Avenue, Chicago.

Mr. William M. Kendall has been elected to fill the vacancy on the board of directors of the Architects' Offices, Incorporated, caused by the death of its late president, Mr. Burt L. Fenner, and Mr. William S. Post, a member of the board of directors, has been elected to the office of president.

Mr. C. Grant LaFarge, F. A. I. A., M. F. A., and Mr. Samuel Adams Clark, A. I. A., announce that they have formed a partnership under the firm name of LaFarge, Warren & Clark, for the practice of architecture, with offices at 146 East 46th Street, New York City.

A. F. Amodio, architect and civil engineer, desires to announce that he has opened his main office at 309 Commerce Building, Atlantic and North Carolina Avenues, Atlantic City, N. J.

Mr. Roy G. Pratt wishes to announce that he has removed his office from 801 to 1314 Franklin Trust Building, Philadelphia, and would be pleased to receive manufacturers' representatives and catalogues at the above address.

L. Kent Moatz, architect, announces the opening of his new offices at 712 Union Trust Building, Cleveland, Ohio.

Burt Leslie Fenner, F. A. I. A.

THE death of Burt Leslie Fenner, on January 24, is a great loss to the architectural profession, and an occasion of grief to his many friends. Mr. Fenner was born in Rochester, N. Y., in 1869; attended the University of Rochester and the Massachusetts Institute of Technology, and in 1911 received the honorary degree of M.A. He entered the office of McKim, Mead & White in 1891 as a draftsman, and in 1906 became a partner in that famous firm. He was a Fellow of the American Institute of Architects, had been president and recording secretary of its New York Chapter, and served on many committees. During the war he was general manager of the United States Housing Corporation under the Department of Labor.

The New York Society of Landscape Architects

AT the Arden Gallery, in the Scribner Building, 597–599 Fifth Avenue, from March 17 to April 18 there will be held the Second Annual Exhibition of the New York Chapter of the American Society of Landscape Architects.

This exhibition will arrest the attention of all who love the out-of-doors, for in it will be assembled noteworthy photographs of gardens designed and executed by the landscape architects. The members of the National Sculpture Society have also contributed sculpture appropriate for the garden, and in addition there has been enlisted the co-operation of artisans who are interested in the development of garden furniture and garden accessories. In a word, the exhibition stresses the fact than an outdoor world is a place in which to live.

The work of the landscape architect includes the development of extensive estates where the house is united to the grounds by terraces or formal gardens furnished with fine accessories; where broad lawns will sweep away toward distant views of water, farm or woodland boundaries; where farm buildings, garage, vegetable garden, and other utilitarian units are conveniently grouped and screened from view; where tennis courts, swimming-pools, and even private golf courses and polo fields are considered. It also includes the more simple and yet distinctive setting of the small home or remodelled farmhouse, with its intimate garden and grassy paths which lead away into an informal woodland or to the brook where wild flowers grow.

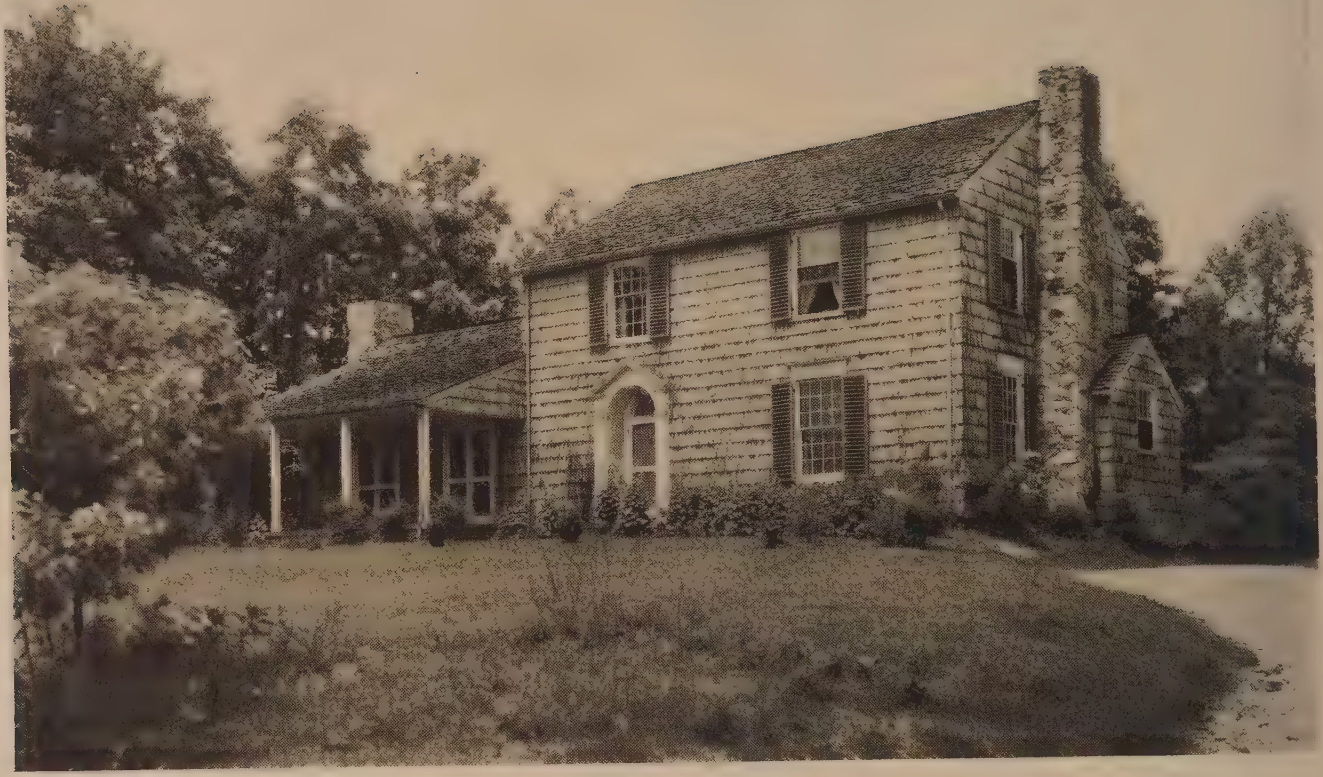
The ability of the landscape architect successfully to solve these and other problems is proved to all who see the charming photographs of their completed work which are now on exhibition at the Arden Gallery.

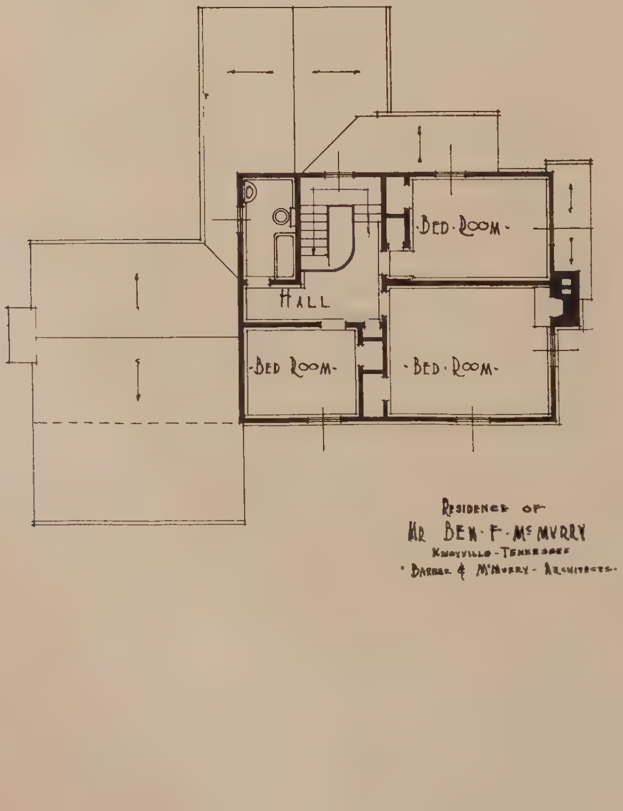
Lecture on Tudor Architecture

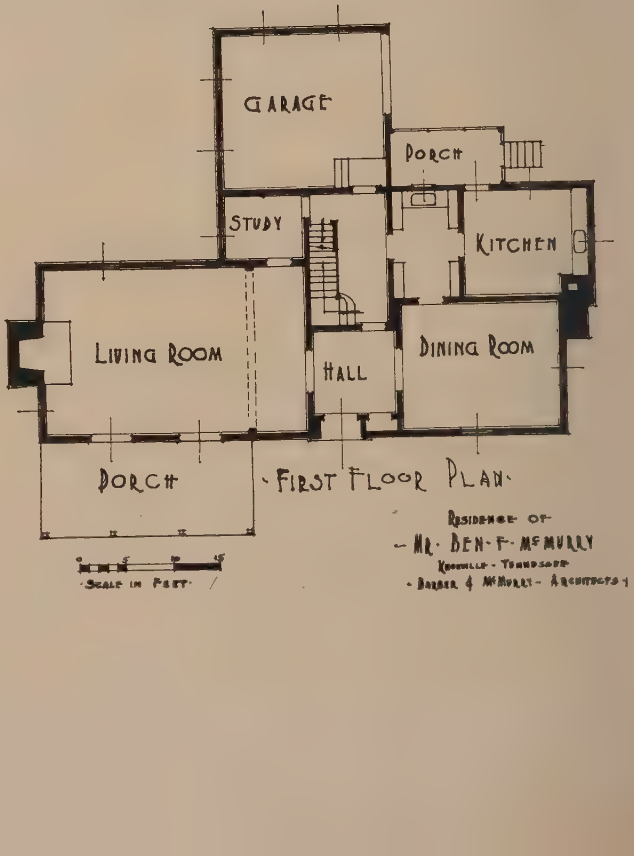
AN illustrated lecture on "Tudor Architecture" will be given to a number of Chapters of the American Institute of Architects by Mr. Sydney E. Castle, R. I. B. A.

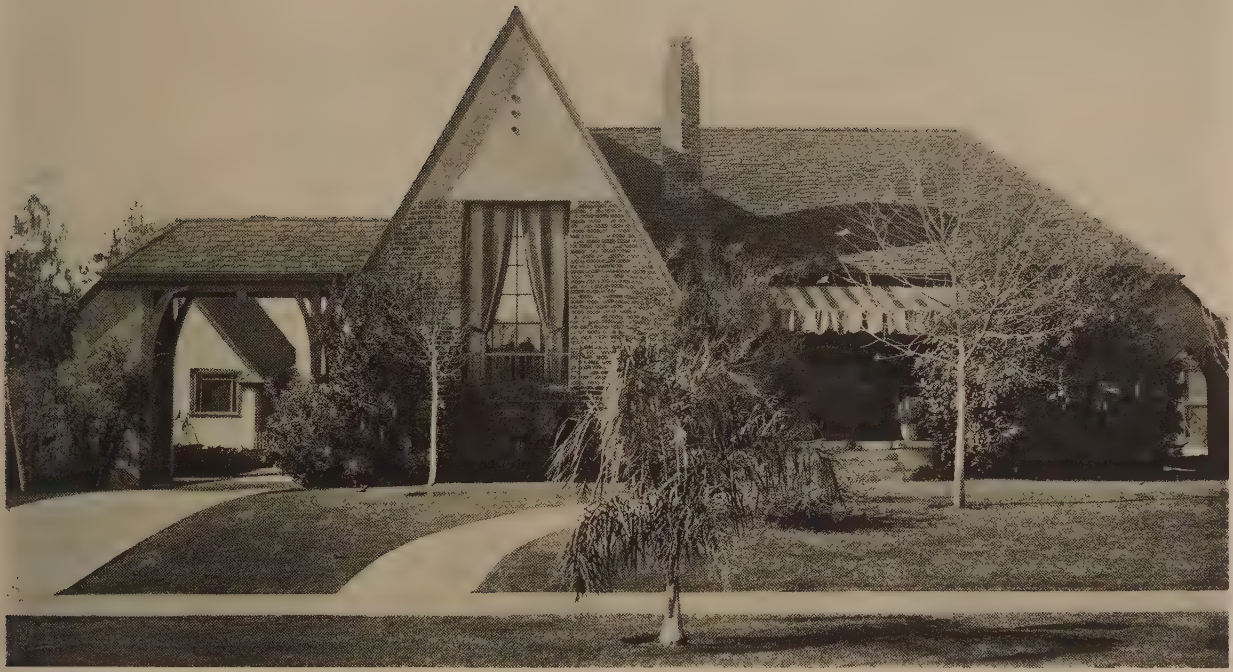
Mr. Castle, who is familiar to American architects through his pencil and pen-and-ink sketches, will illustrate his lecture with about sixty lantern-slides, and will have with him, for inspection by his audiences, a sketch-book of details covering panelling, plaster, fireplaces, chimneys, doors, etc. In many instances his talk will be followed by a general discussion.

The lecture will be given under the auspices of the Producers' Research Council, affiliated with the American Institute of Architects.

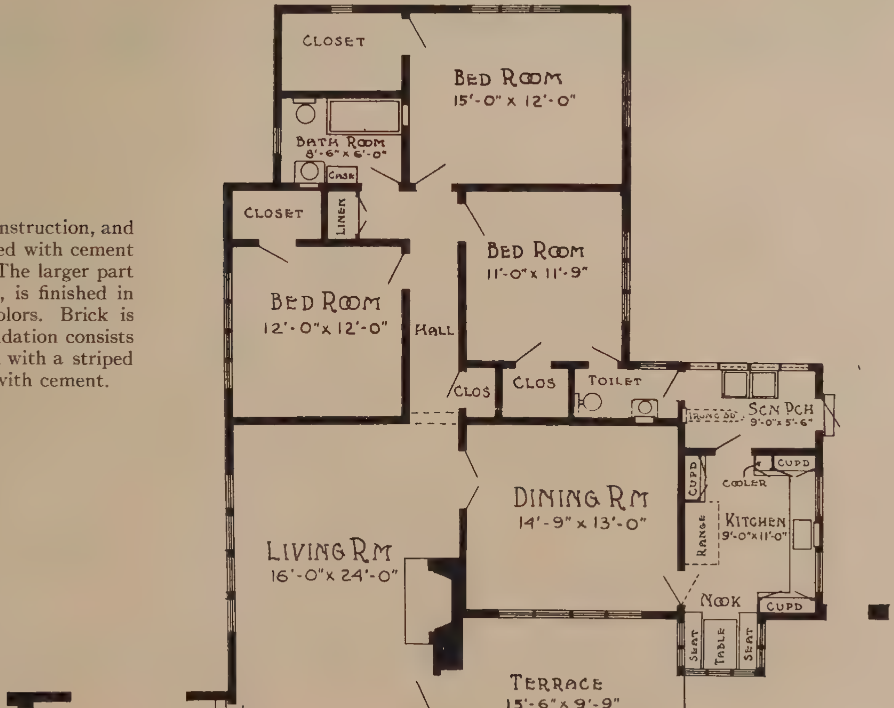



Bed Room
Hall
Bed Room
Bed Room
Residence of
Mr. Ben F. McMurry
Knoxville Tennessee
Barber & McMurry Architects

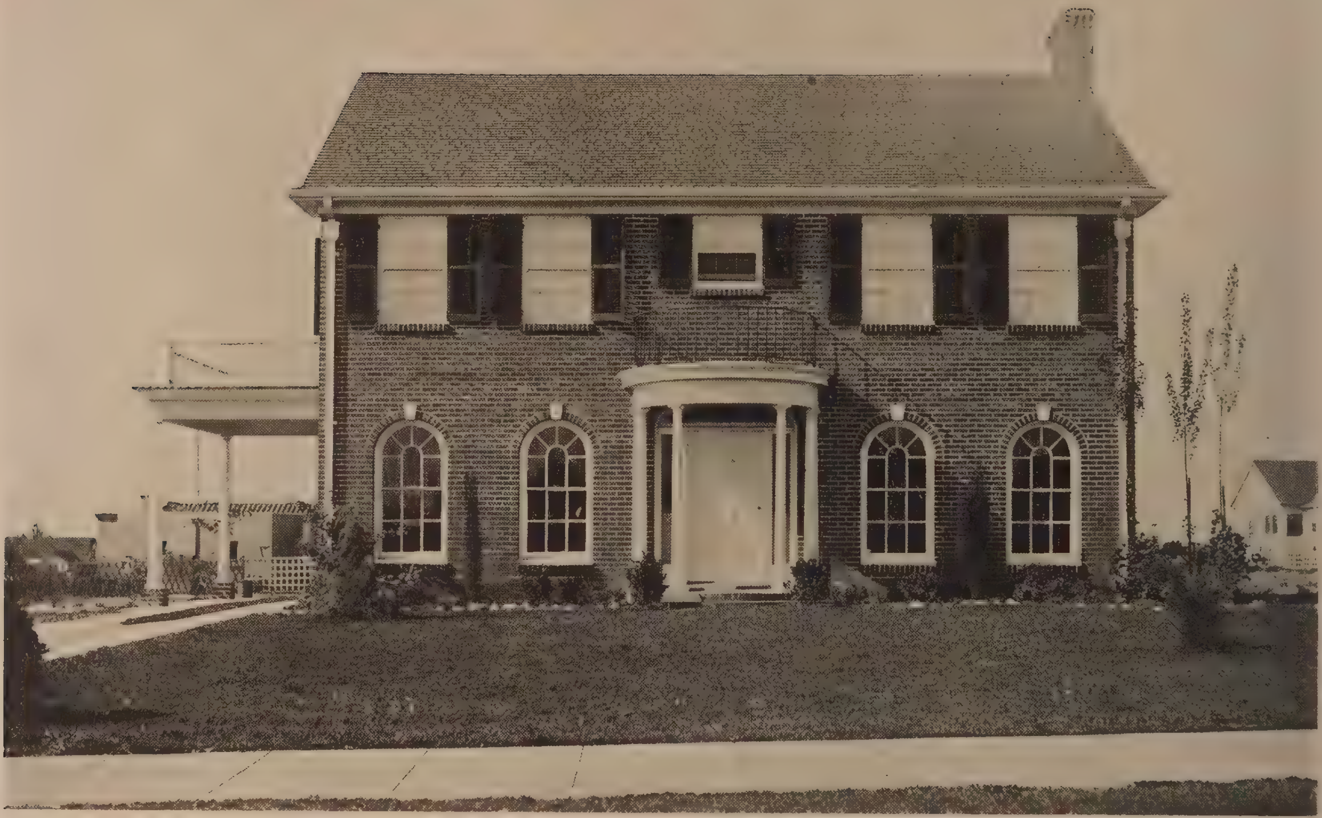

Garage
Porch
Study
Kitchen
Living Room
Hall
Dining Room
Porch
First Floor Plan
0 5 10 15
Scale in Feet
Residence of
Mr. Ben F. McMurry
Knoxville Tennessee
Barber & McMurry Architects

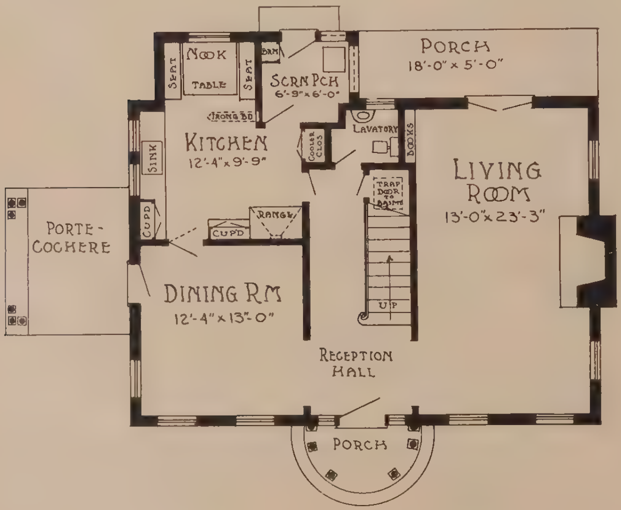


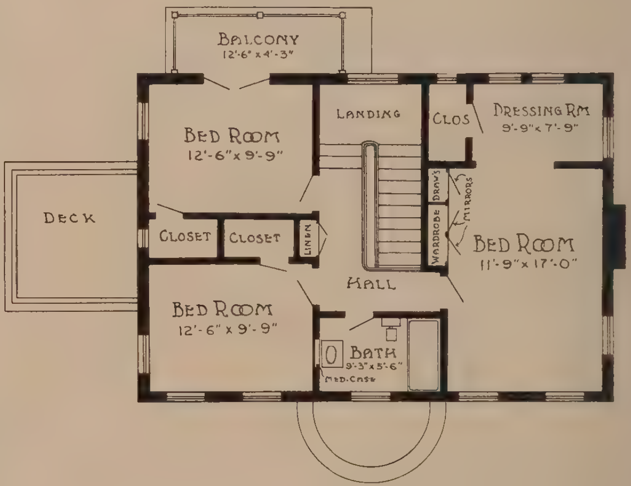
The house shown here is of frame construction, and its outside walls are, in the main, finished with cement stucco, which is in light apricot color. The larger part of the gable facing the street, however, is finished in brick veneer, of deep red and brown colors. Brick is also used for the chimney, and the foundation consists of concrete. The front terrace is covered with a striped awning, in bright colors, and is floored with cement.



HOUSE, KENNETH K. CLARK, LOS ANGELES, CALIF. R. J. Kieffer, Architect.

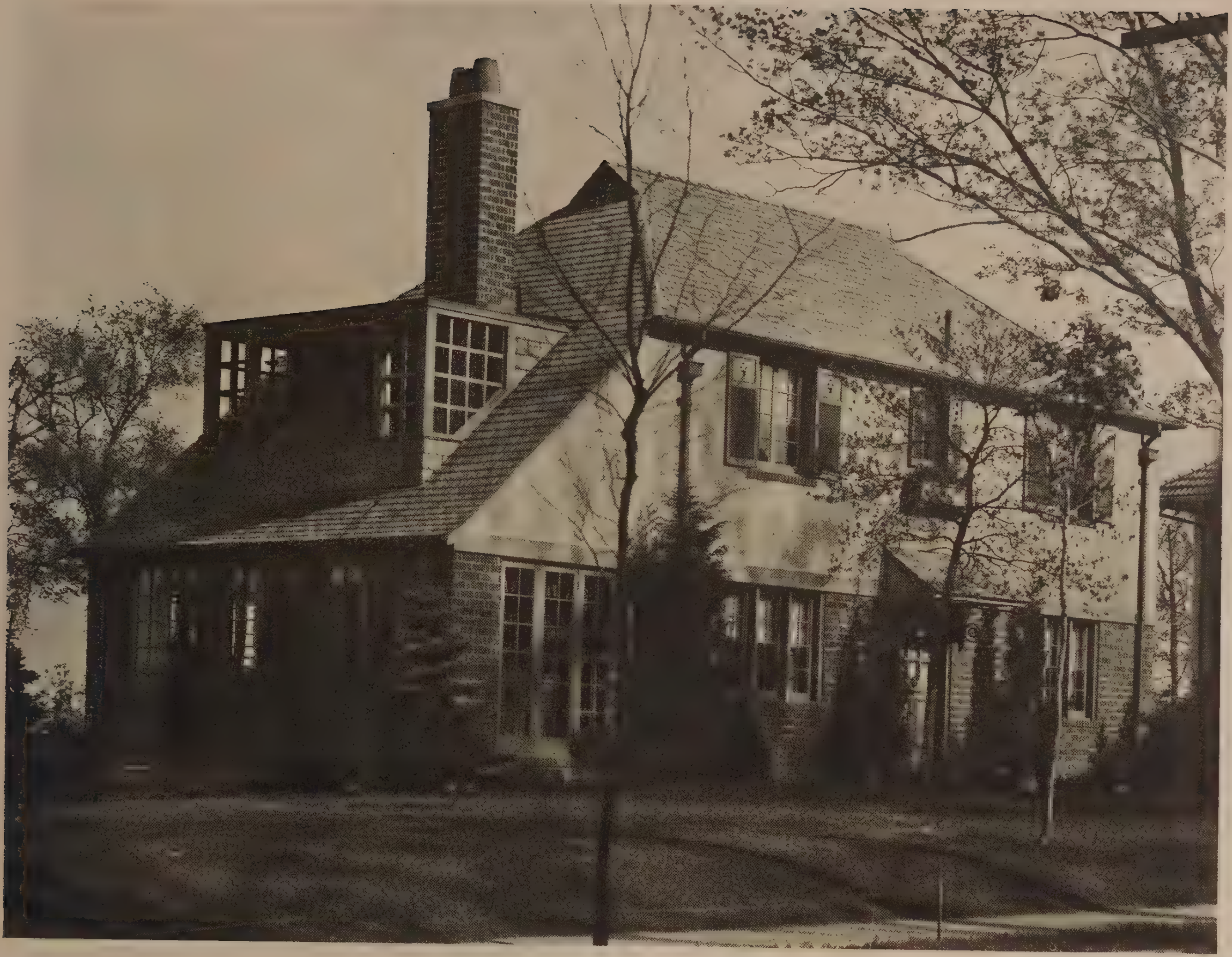


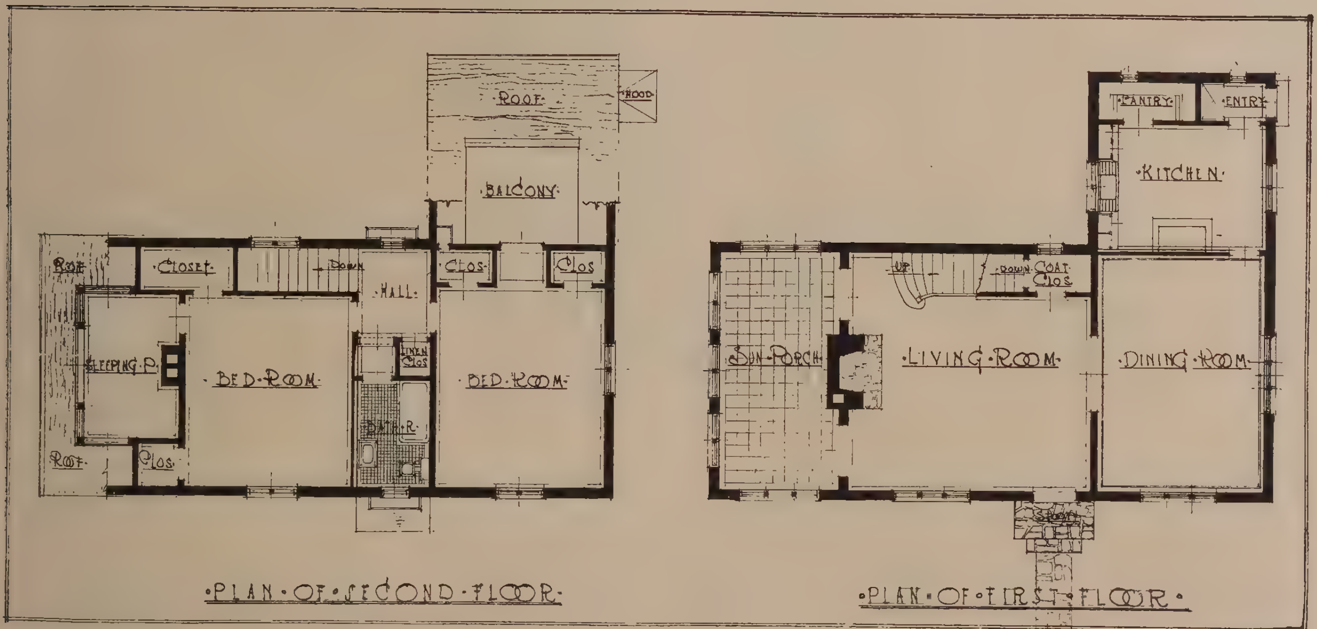




RESIDENCE, FRANK ALLEY, SANTA MONICA, CALIF. P. J. Rowell, Architect.

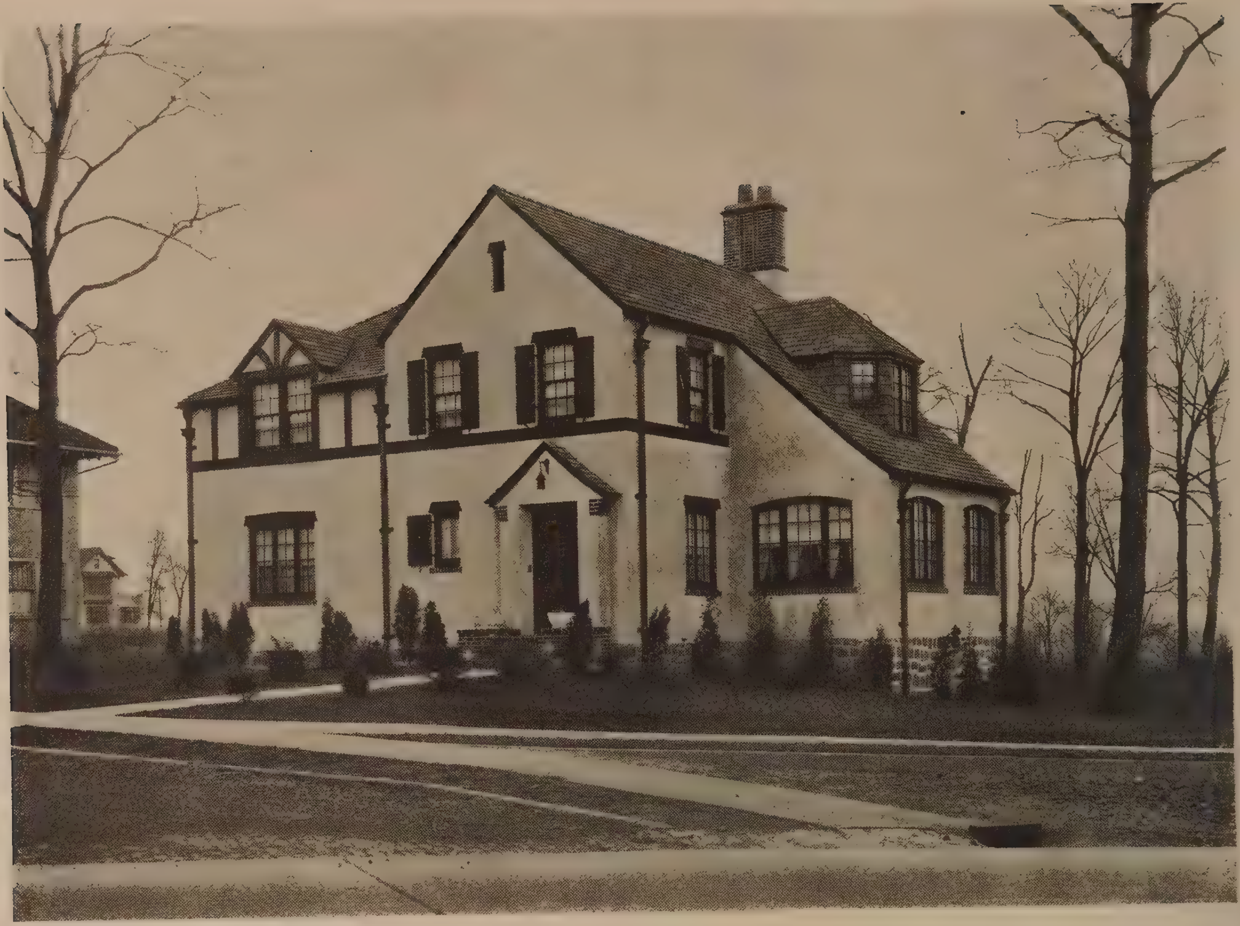
The Colonial brick house illustrated herewith is of solid brick construction, of a bright red color. The wood trimming is in pure white. The shingled roof is stained a grayish green, and the shutters at the second-story windows are painted a dark green. A black wrought-iron railing is used to enclose the balcony over the little entrance porch, and the foundation is of concrete.

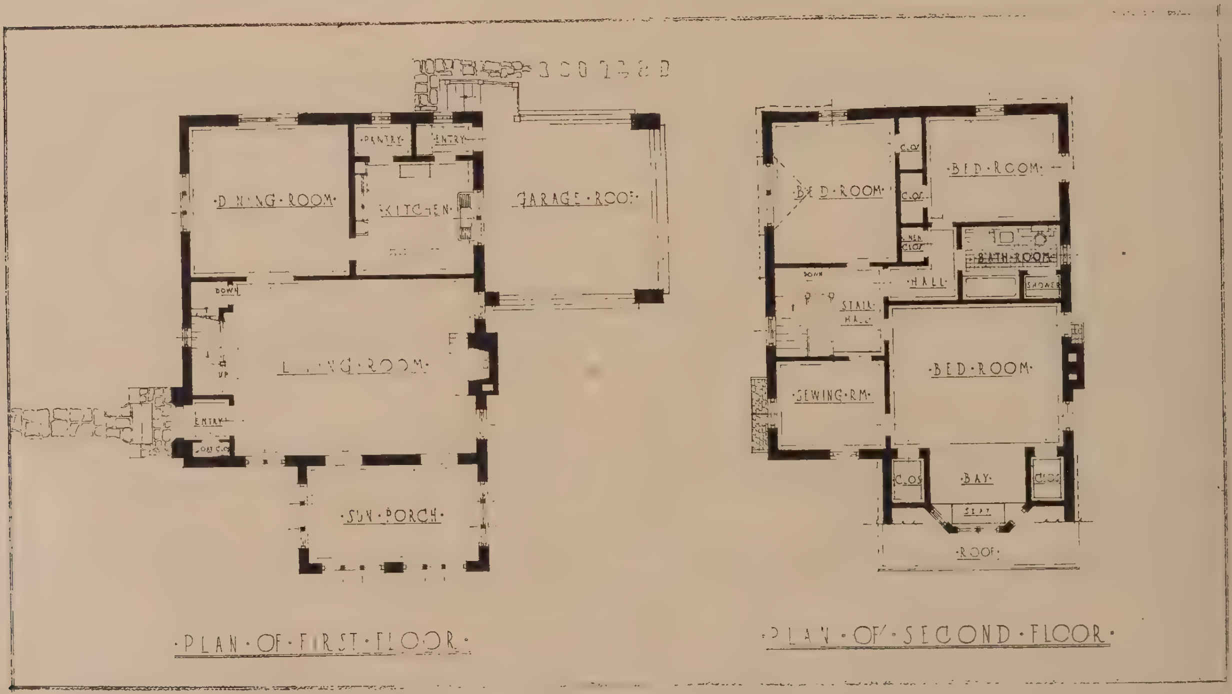




HOUSE, HARRY V. CAVAGNARO, PALISADE, N. J.

Granville W. Dexter, Architect.





HOUSE, OTTO MAMPE, PALISADE, N. J. Granville W. Dexter, Architect.

CONTACTS

CONTACTS will endeavor to present practical ideas that will be of real assistance to the business side of the professional offices. It is also the purpose of CONTACTS to bring about a better understanding and co-operation between the members of the profession and the entire industry. You are invited to make CONTACTS a round-table for your ideas. Address CONTACTS, ARCHITECTURE, 597 Fifth Avenue, New York.

Are Buildings Safe?

The Achilles Heel of Construction

By Alfred C. Bossom

Is the steel-frame skyscraper an invulnerable giant, or has it its Achilles heel?

That Greek god of old, supposed to be proof against the attack of his enemies, was unfortunately mortal in one spot. The steel skeleton of the modern tall building is all that present-day engineering skill can make it, when it is first erected. The strains and stresses are calculated to a nicety; the effect of vibration is carefully discounted; the pressure of the cyclone is provided for and the question of deterioration from crystallization of the steel is considered. Rusting is cared for by paints, cement wash, or otherwise, and in addition to this, there is a factor of safety required by the Building Code, so that theoretically every modern steel building is proof against the assaults of time and decay.

But are we sure that our theory will work out in practice?

This is not a note of alarm but to call attention to the fact that we are placing faith in an idea that the steel frames of our modern buildings are proof against any action, but experience has shown us that similar material when placed under similar conditions in the form of pipes, etc., in buildings is not immune. Before a meeting of the Machine Club in New York City, the writer called attention to this condition.

There is at this moment, perhaps, being invested in buildings more capital than in any other one form of industry. We are taking our people out of the non-fireproof three-story structures and housing them in apartment-houses twelve stories high, more or less. We, as architects, are taking the nation's wealth in huge volumes and tying it up in investments which would stagger the country if, by some misadventure, these investments did not work out as anticipated. Newspaper head-lines sometimes strike a note of the alarmists more so than intended, but "prevention is better than cure," both as to protection of human life and insurance as to capital investment.

Alfred C. Bossom.

We must never forget that it is only a few years ago when the first steel-frame building was erected. By this same token, many of them have been very short-lived. The fact that the introduction of the steel frame made it possible to build higher and higher buildings with greater area of rentable space upon a comparatively small site, has been the basic cause of the speculative builder to take a greater interest in this form of investment. Like the man in the New Testament who said unto himself: "Behold, I will tear down my barns and build greater," the high buildings of yesterday have been replaced by the great structures of today. The Building Codes have made the smaller building less profitable. The greater area makes the original cost and later supervision and maintenance less expensive, thereby bringing in more revenue, and again the Zoning Laws have made unlimited height with reservations desirable.

The latter-day development of tall buildings has made the great structures now being erected of such value that it will be impossible financially to scrap them, even after a much longer period than our present-day calculations might justify. As conservatism grows in this country, as it has in all older countries, so will the aversion to pulling down of great buildings become a factor of greater importance. But, what are we truly facing?

In certain of the buildings that are being pulled down, no evidences of deterioration have been found; on the other hand, the pipes in the floor of the Gillinder Building were found to be in very bad condition. Again, in the writer's experience at Galveston, Texas, he has seen pieces of steel beams, of the same constituency as used in the structural frame of our skyscrapers, diminish in strength so remarkably

(CONTACTS—*Continued*)

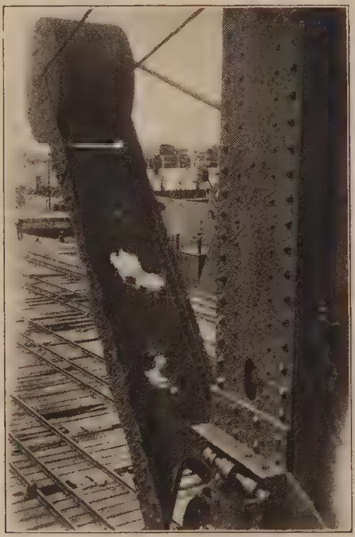
that a shock was experienced at the possibilities at what might occur should such conditions exist elsewhere. Again, in Charleston, W. Va., where the ground is largely impregnated with minerals, the steel pipes when in contact with water become useless in about a year or eighteen months.

Again, in a recent photograph of the steel frame of the Giralda Tower of the old Madison Square Garden, the lower portion of the steel frame showed no deterioration whatever; but in the upper portion, which was partly of steel and partly of iron, very marked deterioration occurred. The signs of rust appeared in places here and there without any clear rhyme or reason, for every provision had been made that was known to protect this material at the time.

In pulling down the old Delmonico Building on 45th Street there was considerable rust or deterioration in the strength of the steelwork, although again, as a whole, very much of the skeleton was in exceedingly good condition.

It is interesting in this connection to note that the columns that were surrounded by concrete were found to be in excellent condition when they were bared for the sledge of the wrecker. A Fifth Avenue building, when opened to enable additions to be made, showed its exterior columns in a weakened condition and they were becoming more and more so.

In tall buildings, different cities allow different weights as to the possible live loads, varying from forty to seventy-five pounds; also the factor of safety required varies, so that in places where the lesser estimated live load exists or where a smaller factor of safety is permitted, the risk due to rusting or atmospheric action correspondingly is enhanced.



Pier at Vera Cruz, showing what happened to the unpainted steel when left exposed to the weather.

Undoubtedly the monolithic structure of our new stone age, composed of concrete and reinforced steel rods, depends for its durability upon the permanence of this steelwork. As there is again an uncertainty as to what is the best form of protection, we are starting off on a premise which is decidedly among the unknown factors of the building industry.

The matter of oxidation of all steel or ironwork is a very serious one, particularly under the test of dampness and more particularly the test of dampness in salt air. It is not unusual in such cases to find that a metal pipe has entirely disappeared, and that a hole in the concrete is the entire remains of its former presence, the concrete doing the work of the metal.

In many of the buildings, particularly those of speculative nature, pipes intended for steam or water often come in very close proximity to the steel columns, girders, and floor beams. These are sealed up within the construction when the building is finished and it is generally assumed that there is no seepage or leakage taking place. Frequently this is the case, otherwise it would make itself known in some visible manner, but it is not long ago when a building was pulled down in New York City, where a bulge of several inches was noticed in one of the exterior walls, which proved to be caused by leaking water; the pipes having so rusted certain columns as to weaken them to the extent of allowing them to bend under the superimposed load.

As a matter of fact, it is not infrequent for a slight leak to develop in some of these pipes and an abnormal condensation takes place around them. This finds its way to the columns or girders and may quite naturally puncture the material that has been placed as a protection upon the steel frame at the time of its erection.

In another case in a building in New York where the joints of the brick walls had been badly slushed up, the rain penetrated the masonry to the extent of causing the flanges of the steel frame to rust so that eventually some of these were actually supported by the masonry, having slipped free from their intended supports. The walls, of course, cracked, due to the weakness of the steelwork, and they had to be taken down and the steelwork reinforced. Had this not been observed, or had the weight been tremendously excessive, it is well within the realm of possibility that a serious situation might have resulted.

In view of conditions such as these, the writer feels that it would not be unreasonable to have the steel framework of the skyscrapers inspected, from time to time, after erection. It would not, of course, be possible to tear the outer covering of all of these metallic supports, but it would not require very much work to remove sections of the concrete work, terra-cotta or brick furring, at a certain number of strategic points. Say every five or ten years, an inspection would reveal if deterioration were taking place. If there were periodical inspections of this nature, every one would feel reasonably sure that he was guarding against a possible trouble.

We carry plate glass and elevator insurance without hesitation for the protection of human life, and surely this steel investigation would only be another form of protection, and a great economy in the last analysis, well worth being undertaken by any building owner. If any signs of trouble were occurring they could be followed back to their source before they had created any disastrous results. With this object, the matter has been taken up by the writer with the Department of Buildings of the city of New York.

Two factors are outstanding in the discussion of this subject, first, buildings themselves, as they not only represent a tremendous investment, but they also house millions of people, and next, the great construction industry. Building and steel would receive a striking blow to their continued progress, if one of our great buildings should begin to lean or in extreme cases should fall. In the designing of our buildings, it is well worth while to see that we give consideration to the steel frame; if need be, to taking X-ray photographs of parts from time to time, to determine if the steelwork is as it should be.

(CONTACTS—*Continued*)

What Do Architects Do All Day?

What the Architect's Advice Is Worth—The Duties He Performs—His Income

By Robert W. Blodget

Of the firm of Ludlow & Peabody, Architects

IN answer to the question I have heard asked many times "What does the architect do all day?" I can only protest that with so many problems requiring study and solution, the architect, if he has very many jobs in the office, does not get many opportunities to put his feet on the desk and relax, and the large pipe that is supposed to be his hobby goes out frequently because he needs his breath for other things.

Robert W. Blodget.

On top of it all he has the business management of his office as well as drumming up new work to keep the wheels turning.

Of course, except in the very smallest offices, the architect himself does not perform all of the work. When there is more than enough work for one, some of it must be delegated to another, and as the volume of work increases more and more must be delegated until in extreme cases the architect himself can only exercise general direction of it all. It is an exceptional architect who will not buckle down and work just as hard as any of his employees, if the occasion warrants it.

Is the Architect a Luxury?

There seems to be a feeling on the part of some that the employment of the architect is more of a luxury or a tax that is paid to art than a necessity in the field of practical things.

It does not require any long explanation to convince any one of the necessity and to define the function of the builder; a tangible something, the building itself, is before them. It is the work of the builder. But when one tries to explain just where the architect fits in the picture, it begins to get complicated to the layman, particularly when he is told that the architect received nearly as much for his fee as the builder received for his services in constructing the building.

A vision of large fees for some intangible kind of service is presented.

Those intimately connected with the building industry appreciate the economic necessity of the architect, and have a general idea at least of the service he performs. It is doubtful, however, whether knowledge is general as to the cost to the architect of the services he renders; and I fear many laymen and even professional men are not free from the thought that architects make large profits.

I, therefore, think that too much cannot be said to correct the erroneous ideas or lack of understanding that seems to exist in regard to the work of the profession.

The Duties of the Architect

To provide the solutions of questions that the owner may bring up, and the machinery for carrying them into execution, is part of the function of the architect. Sketches, working drawings, specifications, details, his professional training and experience, and the services of the organization he has built up, are the instruments of his service.

His sketches involve the settlement of all the preliminary problems, such as the design of the exterior, the layout of the various floors, size and height of the building, etc.

His working drawings and specifications translate the work shown on the sketches into a form where the actual quantities, sizes, and kinds of materials, and the methods to be followed in executing the work are accurately indicated.

He secures competitive estimates for all the labor and material involved.

He draws the proper form of contract between the owner and the successful bidder, and protects the interest of the owner in the negotiation of this important document.

He superintends the actual construction of the building in all its parts, and sees that the owner secures what he has contracted for.

He is the arbiter of all disputes that may arise on the work between the owner and the builder, and between any other parties connected with the work. While the architect is employed by the owner, he is bound by tradition to see that no violence is done to the rights of the other party to the contract. How faithfully the profession has lived up to this tradition is evidenced by the fact that contractors everywhere are perfectly willing to sign contracts and specifications containing clauses binding them to do everything to the approval of the architect. While the decisions of architects are subject to review by courts or arbitration boards, in probably 99 per cent of cases the decision of the architect is accepted without contest by both parties. The architect has therefore a semijudicial status on the work and saves endless litigation.

What an Architect's Advice May Mean in Dollars and Cents

The physical preparation of the drawings, specifications, etc., and looking after the work, are not by any means all of an architect's service. His professional advice, available to his client throughout the term of his employment, oftentimes saves the client more than his fees. I can only touch briefly on this phase of his service, the field is too broad, but, to illustrate the point, I wish to cite two striking examples of what an architect's advice may mean in dollars and cents to a client.

Not long ago, the owner of a plot in New York was hesitant about doing anything by way of development, as under the law only a seven-story building could be erected on the site. It did not figure to be a good investment for his money, but rather than allow the property to remain

(CONTACTS—*Continued*)

idle, he finally overcame his scruples and employed an architect to make the plans of a seven-story building. The architect's study of the problem developed the fact that a slight modification of one minor provision of the law would permit the erection of an eight-story building. He applied for and secured the modification and the building was erected from his plans. This made a good investment for the owner instead of a bad one.

How a Fifty-Thousand-Dollar Saving Was Brought About

The other case in point is this. An architect, after careful study, advised the owner to award the contract on the basis of "cost plus fixed fee with an upset price." The upset price was the amount of the contractor's lump-sum bid. The owner questioned whether it would not be to his advantage to share savings 50 per cent to the owner and 50 per cent to the contractor, in order to insure the interest of the contractor in making a saving. The architect strongly advised against this for the following reasons—*i. e.:*

The material market, he expected, would soon be a falling one.

The general-contract estimates were taken in the spring, when every one was busy, whereas the bulk of the actual subcontracts would be sublet in the fall, when subcontractors would be more eager for the work.

The architect's recommendation was followed, and, as it actually turned out, a saving of nearly $100,000 was made on the upset price. The architect's advice had saved the owner $100,000 as opposed to a lump-sum contract and $50,000 as opposed to the "sharing of savings" form of contract.

Knowledge as to materials available, their comparative cost, and how and where to use them to the best advantage in obtaining desired effects at low cost, may save waste of many thousands of dollars on a building. This is a function of the architect and an important one.

What Determines the Architect's Income

Whether the architect makes a good yearly income from his work depends on many things, such as how his office is organized and managed, to what an extent the architect himself enters into the actual production of the work, the kind and size of the jobs his office is employed on, his ability to keep his organization constantly supplied with work ahead, and the volume of business he does in the course of the year.

Some architects do a general run of what might be classified as small work. It grows increasingly difficult for an architect to make a fair profit on small work at the regular commission rate, and it is quite safe to say that such architects are not growing rich.

Other architects are not interested in doing more work than they can give close personal attention to. This limits their output and consequently their income.

Some of the large offices are organized on a quantity-production basis, and turn out an immense amount of work in the course of a year. They are the real money-makers of architecture. Even so, I do not believe they are making more, comparatively speaking, than is made in any other profession or business requiring an equal amount of brains and effort.

The size and type of buildings have a great bearing on the architect's income.

Generally speaking, the 6 per cent commission which is the normal architect fee nets a fair profit on large work, something less than a fair profit on medium-size work, and possibly no profit or even a loss on small work, if the same quality of service is given on the small work as on the large. I know of an instance at present where an architect receiving $13,000 commission on a $220,000 church has an actual cost sheet on his desk showing his cost to date just under $13,000 with the work not completed. His only uncertainty is whether he will have devoted his own services and those of his organization for a year and a half gratis, or whether he is to pay actual money for the pleasure of doing so.

How to Select Contractors

IN the interest of the efficient execution of contracts, the Boston Building Congress urges the adoption of the following practices in securing estimates and awarding contracts:

(1) Do not ask for competitive approximate estimates unless adequately paid for.

(2) Furnish complete, clear, and accurate plans and specifications when asking for bids.

(3) Invite only a limited number of contractors to compete, six generally providing adequate competition.

(4) Invite for a given piece of work contractors of substantially equal ability and standing.

(5) Invite only contractors to whom you are willing to award the contract.

(6) Having invited bids as provided above, award the work to the low bidder, unless other considerations than price are to enter into the award, in which case make this fact perfectly clear in the notice to bidders.

(7) Where the time for the completion of the work is important, name a definite time, on which all bids shall be based. Do not invite bidders to name their own time limits as well as their prices.

(8) Eliminate as far as possible unit prices, alternate estimates, and secondary estimates when asking for bids.

(9) Do not award a general contract without determining in advance the subcontractors to be used on the principal portions of the work.

(10) In order to determine subcontractors in advance follow one of the following methods or a combination: (*a*) provide that the general bidders shall name the principal subcontractors they intend to use in their proposals; (*b*) submit to the general bidders a list of approved contractors for such important subcontracts; (*c*) secure principal sub-bids and send a list of designated names and amounts to all general bidders to be incorporated in their bids.

(11) Where work is covered by allowances to be adjusted after the general contract has been awarded, reduce such items to the practicable minimum, and do not include under "allowances" subcontracts of major importance.

(12) In selecting bidders for designated bids, or allowances, or for separate contracts, give due consideration to their labor policy.

In explanation of the foregoing statement the Boston Building Congress submits for the careful consideration of owners, architects, and engineers, a list of comments on current practices in securing estimates.

A copy of these comments may be had by addressing "Contacts" editor.

CAGNES-SUR-MER. From the water-color painting by Gerald K. Geerlings.